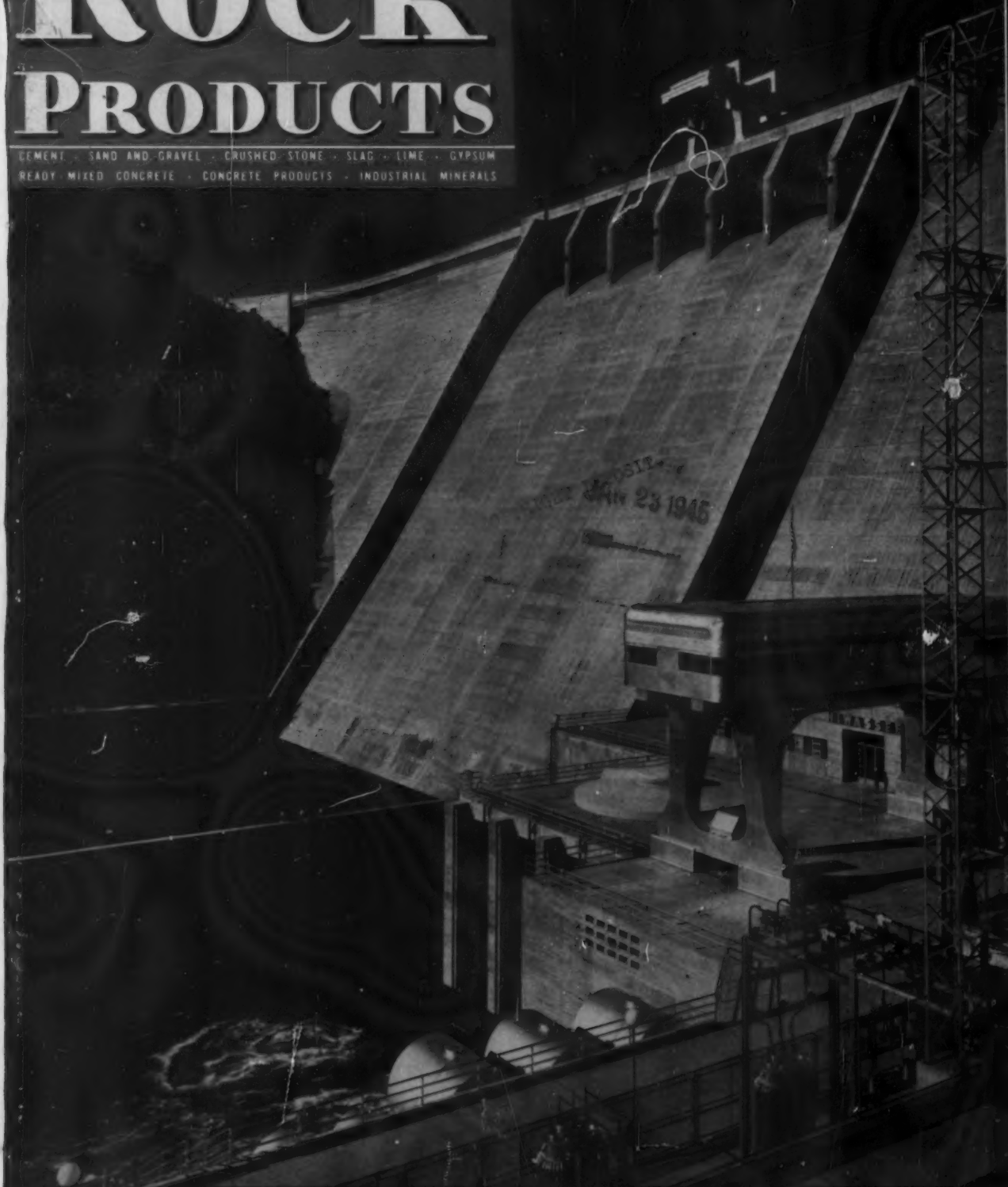


THE INDUSTRY'S RECOGNIZED AUTHORITY

# ROCK PRODUCTS

CEMENT • SAND AND GRAVEL • CRUSHED STONE • SLAG • LIME • GYPSUM  
READY MIXED CONCRETE • CONCRETE PRODUCTS • INDUSTRIAL MINERALS



JANUARY 1945 ANNUAL DIRECTORY AND OUTLOOK ISSUE

JAN 22 1945

# PORTER

**Diesel-Electric**

# SWITCHERS

TN950  
A3



*Custom Built*  
**POWER!**

You can order a PORTER Diesel-Electric Switcher with the assurance that it will be engineered, designed and built to fit the requirements of your own particular switching or hauling job. An expert

knowledge of switching problems accumulated over a period of 78 years enables PORTER Engineers to design switching power that will give you the utmost in service at the lowest cost for operation and maintenance. Let us analyze your switching requirements and recommend the type of unit best fitted for the job. Such an analysis may reveal possibilities for substantial savings.



**H. K. PORTER COMPANY, Inc.**

PITTSBURGH 22, PENNSYLVANIA

Factories: Pittsburgh, Pa. • Altoona, Pa. • McKeesport, Pa.  
Mt. Vernon, Ill. • Newark, N. J. • New Brunswick, N. J.

**"CUSTOM-BUILT POWER"**

This 20 min. kodachrome sound film showing the building of a PORTER Diesel-Electric Switching Locomotive is available for exhibition at clubs, meetings, etc. Applications for booking may be addressed to the Advertising Dept.



99  
D

# *True Values are proved under stress!...*

37

It is the ability to withstand shocks and strains and overload that proves character.

American industry has proved its character—its fundamental soundness.

Under the stresses and strains and overload of war,

America's great industrial machine has performed wonders in production. The ideals of the Nation's founders have been defended, not alone by a courageous and united people, but also by an industry they created in their own image.

In this year, 1945, the entire civilized world is grateful for America's proved ability to produce. To the extent that Link-Belt Company contributes to production, throughout industry, we wish to express our gratitude for our opportunities to serve mankind in war and in peace.

*W. C. Carter*  
PRESIDENT



LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Toronto 8.  
Offices in principal cities.



Chicago Plants



Indianapolis Plant

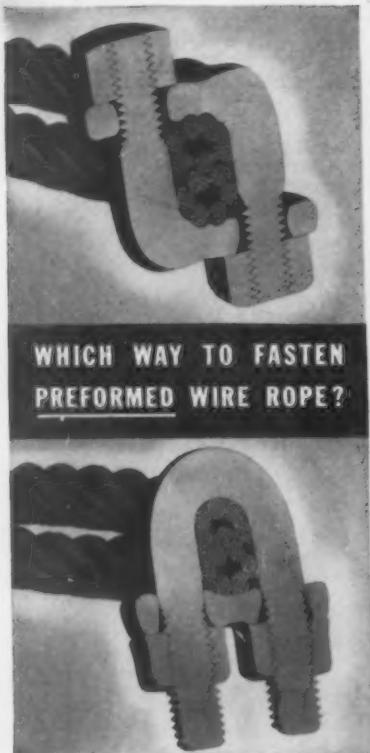


Ordnance Plant



San Francisco

977A



## WHICH WAY TO FASTEN PREFORMED WIRE ROPE?

The cross-section views show what happens to wire rope. In Fig. 1, Laughlin's "Fist-Grip" Safety Clip holds the  $\frac{3}{8}$ " rope with hardly any distortion (note hemp centers). In Fig. 2, hemp center under U shows how rope is squeezed and flattened by U-bolt's smaller bearing area and "Finger-Pinch". Both were tightened to same tension by torque-indicating wrench.



## Here's Why "Fist-Grip" Clips Work Better

Laughlin Safety Clips have identical saddles, flat sides; hold rope firmly without crushing. Saddles fit snugly against "live" and "dead" ends. Fewer clips deliver full rope power. The only clips with drop-forged bolts. Test them, for your rope's sake.

Distributed through mill, mine and oil field supply houses. Write for catalog. Dept. 4, The Thomas Laughlin Co., Portland 6, Maine.

**LAUGHLIN**

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS



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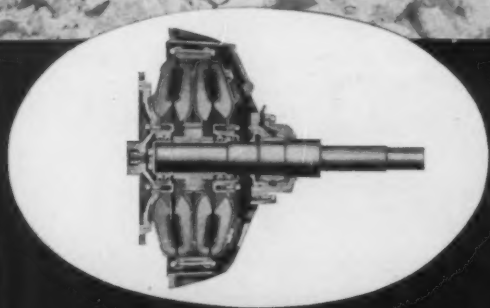
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# How Lorains take the "SHOCK" out of ROCK

*A Lorain 82 taking silica rock in stride.*



Power for Lorain rock shovels flows through this hydraulic coupling. Shocks and sudden strains on the shovel end are cushioned by the fluid connection.

**R**OCK work is really tough—full of shocks, jolts, jars and sudden, terrific loads that ordinarily rock every part of a shovel. But Lorain 82 two-yard shovels—the real rock shovels—are cushioned against shock by a powerful, twin disc hydraulic coupling.

This heavy-duty coupling, diagrammed at left, provides the perfect shock absorber between engine and load—eases strain on cable, boom and mechanism—and assures smooth operation under every condition. You'll never stall a Lorain 82 engine in rock no matter how hard the job.

Add this machine-saving, operator-saving "cushion" to Lorain's powerful all-welded, all-steel boom, center chain drive crawler and all-steel dipper stick and you'll see why these genuine rock shovels are setting new records for long service life, economy and speed where the going's toughest.

Cushion your next rock job with a Lorain 82, the shock-proof shovel, and watch profits mount.

Reg. Trade Mark  
**thew Lorain**

**THE  
THEW SHOVEL CO.**  
Lorain, Ohio

**CRANES • SHOVELS • DRAGLINES • MOTO-CRANES**



**We'll pick the Timken Bit to match it!**

Four major factors are responsible for the outstanding success of the Timken Rock Bit: our superior method of attachment, with shock-taking shoulder; a bit for every kind of rock, each scientifically designed to do its special job with maximum effectiveness; our intimate knowledge of rock formations and rock drilling; nation-wide service facilities from 15 factory branches supplemented by a network of Authorized Distributors, conversion and reconditioning shops, all strategically located for instant availability.

Important as the performance of the Timken Rock Bit is today, it will be even more important during the intensive years of reconstruction that lie ahead; then its ability to effect radical savings in time and cost will help users to operate profitably while meeting any competitive challenge.

That's why it will pay you to adopt Timken Bits *now*. May we have the privilege of discussing your rock drilling problems with you in the near future? The Timken Roller Bearing Company, Canton 6, Ohio.

**TIMKEN**  
TRADE-MARK REG. U. S. PAT. OFF.  
**ROCK BITS**

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*In war or peace*  
**B.F. Goodrich**  
**FIRST IN RUBBER**



## 1900-foot rubber band snaps iron through a mountain

*A typical example of B. F. Goodrich development in rubber*

**W**AR DEMAND for iron ore last year was so great that companies searched out even the "worked over" mines. The one in the picture had some ore—but at the bottom of a pit.

The way to get it out was by conveyor belt, but that would be the highest single lift of any belt in the world and conventional belts that were strong enough would be too stiff to trough and carry heavy ore up the mountain side. So three belts were used, each for a third the distance, but even they wore out fast and transfer points required much attention.

An engineer at this mine had heard

of B. F. Goodrich cord conveyor belt. Made of parallel cords in rubber instead of woven fabric, it is many times as strong and still as flexible as any former belt. Extraordinary records made by this new B. F. Goodrich belt on other "impossible" jobs convinced the engineer it would stand the strain on this one.

The belt was installed, at a 35% grade—almost a rubber elevator. The shaft went through the mountain itself, from pit to railroad cars on the surface—a 1000-foot run.

The B. F. Goodrich cord belt "troughed" perfectly, eliminated two transfer points and reduced mainte-

nance cost. It has already hauled 800,000 tons of vital iron ore, and the owners say it is good for at least 1,250,000 tons the first year and thousands more the next. Jobs like this, that have looked impossible, are being done every day by B. F. Goodrich industrial rubber products—the developments of constant research. That's why it pays to find out what improvements B. F. Goodrich has made in any rubber product you use. *The B. F. Goodrich Company, Industrial Products Division, Akron, Ohio.*

**B.F. Goodrich**  
RUBBER and SYNTHETIC products

*The Problem —  
Transferring washed  
sand and gravel  
from main plant  
and storing in piles  
according to size —*



*How S-A  
Solved  
the Problem*



Take a basic material handling problem . . . work it out in cooperation with S-A engineers . . . and you come up with an efficient system like the one shown here.

Washed stone and sand are moved from the gravel plant on a long inclined belt conveyor. At the storage area, which is partitioned off into separate bins, a shuttle belt conveyor mounted on the bin walls, receives materials from the main conveyor. The shuttle, moving back and forth along its trestle, discharges material into any desired bin.

This installation is still another case of "the right equipment installed right." For similar results at your plant, write us today.

**STEPHEN S-ADAMSON**  
7 RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. ★ BELLEVILLE, ONT.

*Designers and Manufacturers of All Types of*  
**BULK MATERIAL HANDLING EQUIPMENT**

# TRAYLOR



## 13,800 Feet of Rotary Kilns and Multi-Tube Coolers



### WE BUILD

Rotary Kilns  
Rotary Coolers  
Rotary Dryers  
Rotary Sinters  
Scrubbers  
Evaporators  
Jaw Crushers  
Gyratory Crushers  
Reduction Crushers  
Crushing Mills  
Grinding Mills  
Ball Mills  
Roll Mills  
Tube Mills  
Pug Mills  
Wash Mills  
Feeders  
Rotary Screens  
Elevators

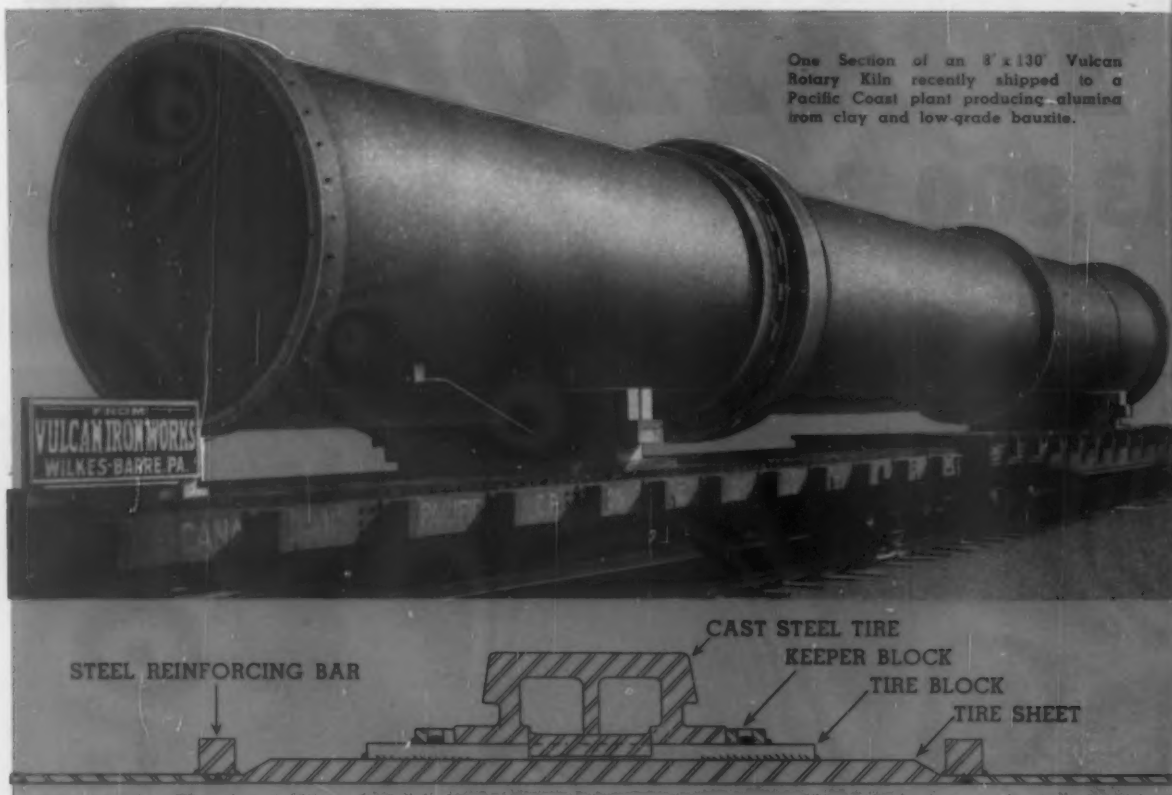
The photograph above shows a small portion of one of a number of very large batteries of Traylor Rotary Kilns manufactured by us within the past few years.

These Kilns, Multitube Coolers and large Compartment Mills, that precede and follow said units, were delivered in such record time that, upon the recommendation of the War Production Board, we were awarded the coveted Army-Navy "E" Award and a star, six months later, for continued meritorious contribution to the war effort. We are proud of this record.

Our technical facilities are instantly available. We invite correspondence from prospective clients.

**SEE OUR BULLETIN NO. 115**

**TRAYLOR ENGINEERING & MANUFACTURING CO.**  
**ALLENTOWN, PENNA., U.S.A.**



One Section of an 8' x 130' Vulcan Rotary Kiln recently shipped to a Pacific Coast plant producing alumina from clay and low-grade bauxite.

## THIS PATENTED RIVETLESS TIRE MOUNTING Cuts Maintenance Costs on Vulcan Rotary Kilns

The longer a Vulcan Rotary Kiln is operated the greater the savings secured—because of its very low costs for maintenance and repairs. Fifty years of continuous experience in the design, manufacture and servicing of this type of equipment has taught our engineers where operating troubles are most apt to occur and how to prevent them.

A typical example of Vulcan Trouble-Preventing Kiln Construction is the patented rivetless tire mounting shown above. Not only does it completely eliminate the rivet-popping once considered inevitable

but its distinctive combination of interlocking lugs and blocks absolutely prevents creeping of the tire in any direction.

Another important advantage is the use of ONE THICK PLATE beneath the tire, instead of several relatively thin plates, thereby improving heat-conductivity and overcoming the former tendency toward burning or bulging of the shell and reinforcing bands at these particular points.

Write us regarding any manufacturing or processing problems within the scope of the equipment listed below. No charge or obligation for estimates, constructive suggestions and preliminary designs.

## VULCAN IRON WORKS

Established 1849

Main Office and Works **WILKES-BARRE, PA.**, New York Office 50 Church

Rotary Kilns, Coolers and Dryers  
Rotary Retorts, Calciners, Etc.  
Improved Vertical Lime Kilns  
Automatic Quick-Lime Hydrators

Toothed, Double-Roll Crushers  
High-Speed Hammer-Type Pulverizers  
Ball, Rod and Tube Mills  
Shaking-Chute and Chain Conveyors

Heavy-Duty Electric Hoists  
Self-Contained Electric Hoists  
Scraper-Loading Hoists  
Cast-Steel Sheaves and Gears

Steam Locomotives  
Diesel and Gasoline Locomotives  
Diesel-Electric Locomotives  
Electric Locomotives and Larrys



# GREATEST JOB STAMINA

on every  
bruising haul

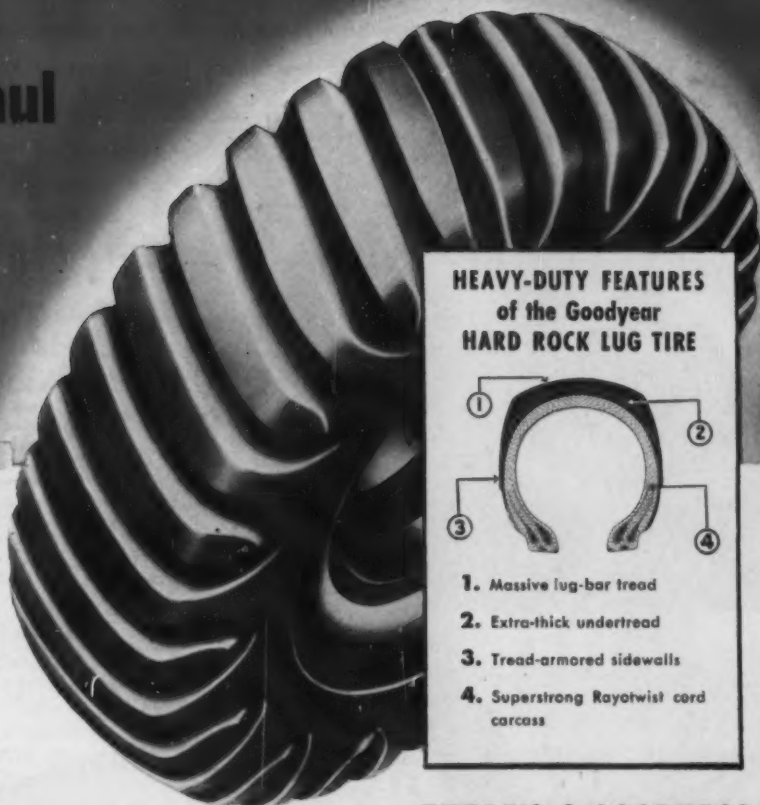


**Y**EARS of top-notch performance prove the standout stamina of Goodyear's Hard Rock Lug tire on the toughest, most bruising jobs of all.

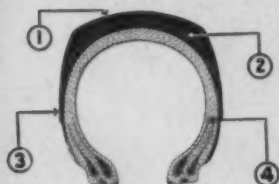
Specially designed for rough, hard work, this brawny giant is armor-built throughout — with extra-heavy undertread and with massive, wide-based lugs that grip and guard, extending well over the shoulders to tread-armor the sidewalls against cuts and bruises.

What's more, it's powered with Goodyear's famous universal two-way tread. No rights, no lefts, it has the same great grip reverse or forward. And it's a self-cleaning tread, with straight, wide, V-shaped grooves open at the ends and so pitched that dirt and stones actually slide out as the tire turns!

Now this time-proved bruise-master — built from materials available today, including the mandatory amount of synthetic rubber — is tougher than ever, thanks to its Rayotwist body —



## HEAVY-DUTY FEATURES of the Goodyear HARD ROCK LUG TIRE



1. Massive lug-bar tread
2. Extra-thick undertread
3. Tread-armored sidewalls
4. Superstrong Rayotwist cord carcass

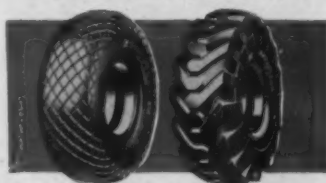
made from Goodyear's patented rayon cord — *the strongest body we've ever used in a work tire.*

It is all these advantages combined that make Goodyear Hard Rock Lugs first choice with men who must move heavy loads over the toughest, roughest ground.

**BUY WAR BONDS—BUY FOR KEEPS**

Rayotwist, All-Weather, Sure-Grip—T. M.'s The Goodyear Tire & Rubber Company

## THERE'S A GOODYEAR FOR EVERY JOB



For drawn vehicles  
specify  
**Goodyear All-Weather  
Earth-Mover**

For traction in  
soft going  
specify  
**Goodyear Sure-Grip**

# GOODYEAR

THE GREATEST NAME IN RUBBER

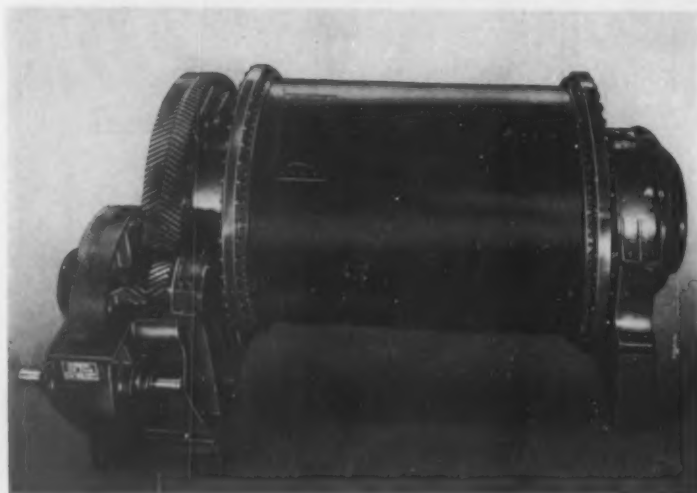
**MORE TONS ARE HAULED ON GOODYEAR  
TRUCK TIRES THAN ON ANY OTHER KIND**

ROCK PRODUCTS, January, 1945

# KVS

## Important Refinements in

Kennedy Machinery for the complete rock products plant incorporates the most efficient principles generally applied to each type of machinery plus exclusive Kennedy refinements.

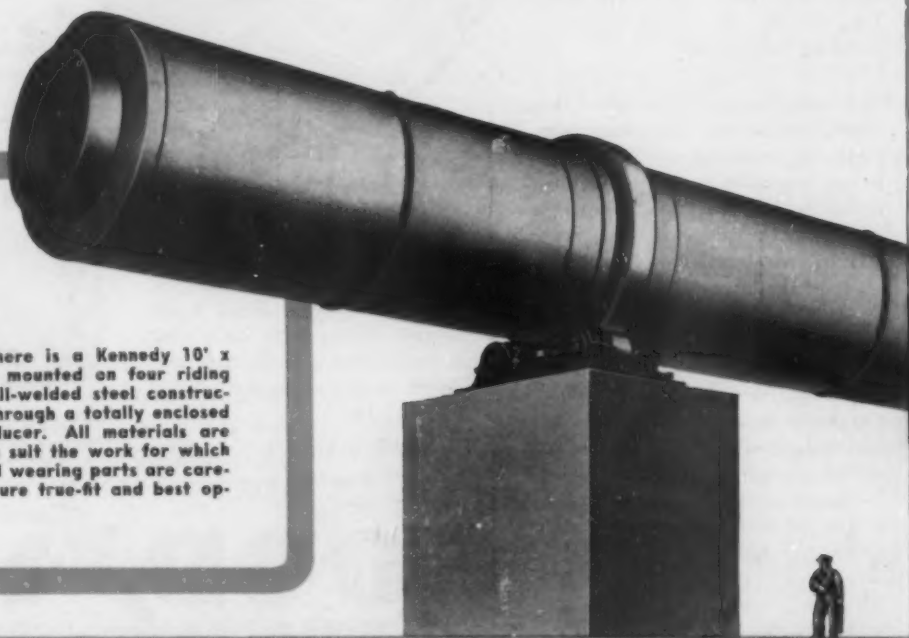


### KENNEDY Integral Gear-Driven Tube Mill

Design of this mill, which has been recently developed, enables the motor to be direct connected to the high speed shaft. The shafts of the double reduction herringbone gears are carried in roller bearings, the seats of which are bored in a jig to a tolerance of  $3/1000$  of an inch. The gears cannot be misaligned or set wrong, and this greatly reduces the power required to drive a mill. The new Kennedy integral gear drive can be used on Combination Ball Mills, Wet Grinding Tube Mills, Dry Grinding Tube Mills, and Air Sweep Tube Mills.

### KENNEDY ROTARY KILNS

Shown here is a Kennedy 10' x 9' x 250' rotary kiln mounted on four riding rings. Kilns are of all-welded steel construction and are driven through a totally enclosed herringbone gear reducer. All materials are especially selected to suit the work for which they are intended. All wearing parts are carefully machined to ensure true-fit and best operation.

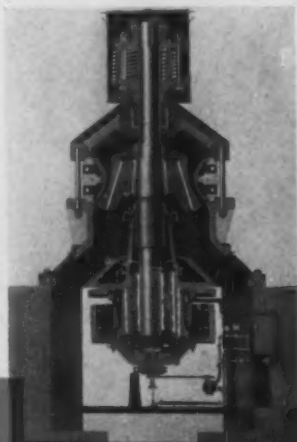


## KENNEDY-VAN SAUN MFG. & ENG. CORPORATION

# ROTARY KILNS, GEARLESS CRUSHERS & INTEGRAL GEAR-DRIVEN TUBE MILLS

**T**HE post-war plant will have to be a modern plant. Its machinery and its design should be based upon the best of the combined operations of those more efficient plants now in existence. It should contain machinery whose design has been conceived to permit high speed operation at low cost. Kennedy-Van Saun has developed and is continually improving such machinery. Three typical types with important refinements are shown here. They have been designed by our own staff of engineers. They have been constantly improved by more than 50 years of experience. They have been built in our own large modern plant. Our engineers and facilities are at your service, and our machinery will help your plant achieve and hold a top efficiency rating.

Kennedy Manufactures, Engineers, and Designs Complete Cement, Rock Crushing, Sand and Gravel, Lime, and Dolomite Plants. Kennedy Products include Kilns, Coolers, Dryers, Crushers and Hammermills, Screens, Feeders, Conveyors, Elevators, Grinding Mills, Air Separators, Classifiers, and other equipment for the complete rock products plant. Write today for descriptive literature about the machinery in which you are interested.



## KENNEDY Ball Bearing Gearless Crusher

With a Synchronous Motor built in its pulley, this machine shows 80% saving in the cost of maintenance and a saving of 50% in power over geared crushers. It has produced 155 tons per hour when set to 7/16" between the head and concaves at the bottom. The motor runs on ball bearings and is continuously lubricated by a force feed lubrication system.



2 PARK AVENUE • NEW YORK 16, N. Y. FACTORY: DANVILLE, PA.



on the tailings

hard digging

removing overburden

feeding the grizzly

**Yes -**  
**NORTHWESTS**  
**WILL BE BUILT**  
**IN A FULL RANGE**  
**OF SIZES**

**18**

**SIZES**

**$\frac{3}{8}$  yard capacity and larger**  
**—a size for every**  
**mining problem**

**NORTHWEST ENGINEERING COMPANY**  
 1806 Steger Building, 28 E. Jackson Boulevard, Chicago 4, Illinois

**NORTHWEST**



**After VICTORY Buy NORTHWEST**

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AHEAD V



# Homocord

## construction in CONVEYOR BELTS

### -another MANHATTAN development- war-proved for your post-war use

Here is a totally different type of Strength Member construction—developed in time to speed war production and now improved with FLEXLASTICS\* for post-war use.

Pre-war installations have been delivering high tonnage on a steady basis that is adding to MANHATTAN'S already distinguished achievements in conveyor belt service.

Homocord construction has been invented and perfected by MANHATTAN engineers particularly and only for conveyor belt use, and it is not designed for use in any other products. It is the first and only conveyor belt possessing the virtues of a cord belt, but with the drawbar strength and resistance to fatigue to hold metal fasteners. It marks a distinct milestone in conveyor belt progress.

Longitudinal Homocords are grouped to give great tension strength and tied together with cross Homocords which allow exceptional troughing for full loading of the belt, plus the strength to permit use of fasteners.

These component Strength Members are sealed-in to make a homogeneous, pliable belt which flexes easily around end pulleys. The Homocords, embedded in moisture-proof FLEXLASTICS\* and mildew-proofed as additional protection, have a flexible, resilient, rolling contact with each other to provide cushioned resistance for heaviest feed impact.

These are significant advantages that will help you meet tomorrow's needs. They are worth investigating now.



\*The term FLEXLASTICS is an exclusive MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS.

AHEAD WITH



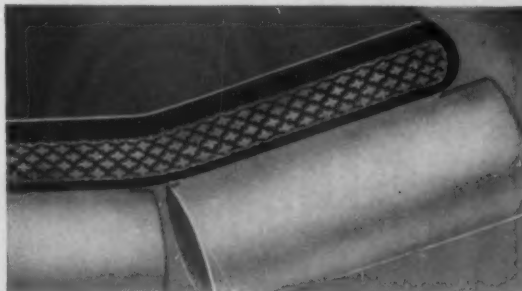
**THE MANHATTAN RUBBER MANUFACTURING DIVISION**  
OF RAYBESTOS-MANHATTAN, INC.  
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

#### ADVANTAGES of HOMOCORD CONVEYOR BELTS

1. Complete bonding of every member into a homogeneous structure.
2. Holds metal fasteners.
3. Lateral flexibility permits perfect troughing, accurate training, reduces fatigue of flexing at bend in troughing idlers.
4. Resists destructive action of continuous or heavy impact feeding.
5. Cushion Homocord body and low inelastic stretch reduce wear and tear of top cover.
6. Homocord body reduces hazard of punctures.
7. Homocords so completely encased in Flexlastics, moisture not admitted, mildew cannot start. Manhattan Conveyor belts mildew-proofed throughout.
8. Longer life, lower cost per ton.



Homocord Conveyor handling unusually large pieces of limestone.



Detail of Homocord Strength Member construction. Note how open fabric structure permits rubber to penetrate and unite all parts into a homogeneous whole.

PRINT IN BINDING

# BUILT TO BETTER



Installation of six Fuller Air-Quenching Inclined-Grate Coolers in a cement plant.

## FULLER AIR-QUENCHING INCLINED-GRATE COOLER

The Fuller Air-Quenching Inclined-Grate Cooler was conceived, designed and built by engineers having years of experience in the cement industry. They knew the problems of the industry and what was needed. With this experience and knowledge they set out to build, not just another cooler, but one that would actually meet desired requirements in a highly satisfactory manner.

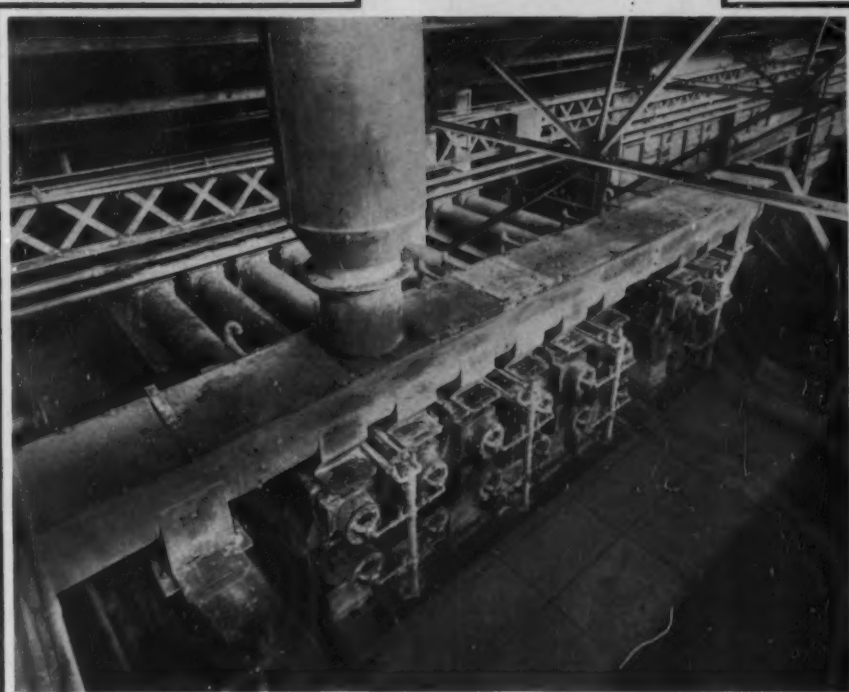
This determination has had its just reward, for over 100 coolers have now been sold, a great majority of which have already been put into successful operation.

This cooler has many outstanding qualities not to be found in any other cooler now being offered the industry. Bulletin CO-3 fully illustrates and describes various applications of the cooler, together with important advantages to be gained through the use of this equipment. Write for your copy now . . . it will be sent you promptly.



FULLER-KINYON, FULLER-FLUXO AND THE AIRVEYOR CONVEYING SYSTEM  
... ROTARY FEEDERS AND DISCHARGE GATES ... ROTARY AIR COMPRESSOR  
AND VACUUM PUMPS ... AIR-QUENCHING INCLINED-GRATE COOLERS ... DR  
PULVERIZED-MATERIAL COOLER ... AERATION UNITS ... MATERIAL-LEVEL  
INDICATORS ... MOTION SAFETY SWITCH ... SLURRY VALVES ... SAMPLERS

# RYOUR COOLING



Eight-unit Fuller Dry Pulverized-Material Cooler installation. Capacity 400 barrels finished Portland cement per hour.

The Fuller Dry Pulverized-Material Cooler was developed and built primarily for the purpose of cooling finished Portland cement and to meet specifications of state highway departments and other users. Also for the elimination of difficulties encountered in storing and packing hot materials.

Installations have now been in successful operation over an extended period in the cement and chemical-process industries.

The cooler is simple in design, efficient, low in power consumption and maintenance. Each cooler unit is entirely independent of the other. One or more units may be shut down for inspection or repairs without affecting the operation of the other units. Internal mechanism is readily accessible.

Bulletin PMC-1 fully illustrates and describes this equipment. We'll be glad to send you a copy on request.

## FULLER DRY PULVERIZED-MATERIAL COOLER

G-39T

# FULLER COMPANY

CATASAUQUA—PENNSYLVANIA

CHICAGO, 3  
Marquette Bldg.

WASHINGTON, 5, D.C.  
Colorado Bldg.

SAN FRANCISCO, 4  
Chancery Bldg.

Every knock is a  
boost in **STRENGTH!**

## TISCO MANGANESE STEEL

the **HARDER** it works—  
the **TOUGHER** it gets!

Small wonder that TISCO Manganese Steel outwears other steels 2 to 10 times in punishing applications. The harder it works, the harder, more durable it becomes. Heavy blows and severe abrasion **increase** the hardness of the surface to resist wear; the tougher body underneath absorbs shocks and prevents breakage.

This unique property of cold "work-hardening" explains the outstanding service records of TISCO Manganese Steel wearing parts in quarrying, mining, dredging, crushing, grinding, pulverizing and similar equipment.

TISCO is the original Hadfield's Manganese Steel in America, carefully controlled in every step of manufacture to insure utmost toughness, wear resistance and soundness. Specify TISCO Manganese Steel wherever parts are subjected to heavy impact and abrasion—both new equipment and replacements. Our metallurgists and engineers are at your service. Write for technical literature giving physical properties of TISCO Manganese Steel.



OTHER TISCO PRODUCTS:  
MANGANESE STEEL CASTINGS  
OTHER ALLOY AND CARBON STEEL CASTINGS  
HIGH PRESSURE GAS CYLINDERS  
ALIGNED PERMANENT MAGNETS  
MANGANESE-NICKEL WELD ROD  
SPECIAL TUCKWORK • WISC. SEAMLESS TUBING

**Taylor-Wharton Iron and Steel Co.**  
HIGH BRIDGE, NEW JERSEY • EASTON, PENNSYLVANIA

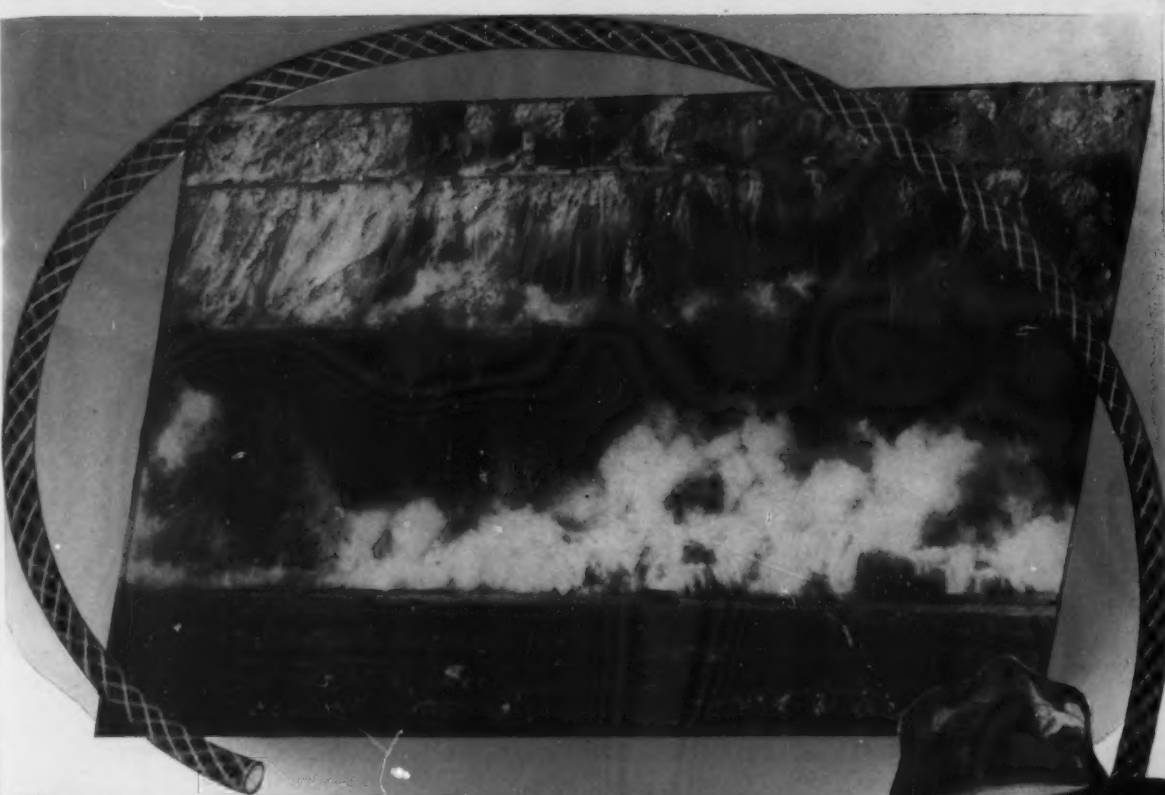


Above:  
Coal and Coke  
Crusher Segments.

Below:  
Gyratory Crusher  
Mantle with Concaves.







## "Primacord helps make every minute count"

With more work to do, and fewer men to do it, pit and quarry men naturally turn to Primacord to help make every minute count.

**Primacord** saves *drilling time*, permits more holes to be shot at one time — hence, less drilling spoiled by back break.

**Primacord** saves *moving time*, gives more efficient use of equipment — hence, longer periods of production with fewer breaks.

**Primacord** saves *loading time*, because it simplifies loading, detonates every cartridge in the hole — hence, allows powder men to vary the load, split it into decks, and use breakers without separate detonators.

**Primacord** saves *hook-up time*, makes up with square knots and half-hitches — hence, gives easiest connections and simplest layouts.

**Primacord** saves *checking time*, as the Primacord trunk and branch line connections are in plain sight, easily inspected.

Five ways from Sunday, Primacord is the logical time-saving choice!



THE ENSIGN-BICKFORD COMPANY  
Simsbury, Connecticut

Manufacturers of  
ENIGN-BICKFORD SAFETY FUSE—SINCE 1898

# PRIMACORD-BICKFORD Detonating • Fuse •

# RAYMOND EQUIPMENT for 19

## RAYMOND BOWL MILL

No Metal-to-Metal Contact of  
Rolls and Ring in Pulverizing

One Standard Motor  
runs Mill and Fan

SIMPLE  
3-POINT  
FINENESS  
CONTROL

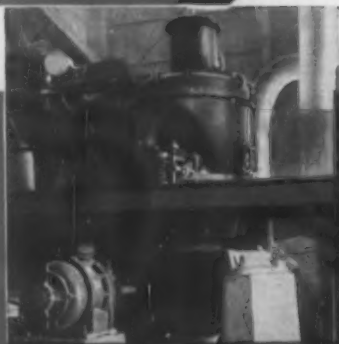
*Super-  
Capacity  
Direct-firing  
Grinding Unit*

Plan for maximum production economy by equipping your plant with Raymond modern-design BOWL MILL.

It is the key to kiln-firing efficiency . . . handles any grade or moisture coal . . . high availability . . . thermostatic control . . . lubrication and adjustments made outside of mill while running . . . noiseless, vibrationless, dustless operation.

Insure the best utilization of powdered coal with Raymond Bowl Mill firing.

### INSTALLATIONS OF RAYMOND BOWL MILLS



**RAYMOND PULVERIZER DIVISION**  
1307 North Branch Street Chicago 22, Illinois

# r 1945 Economy

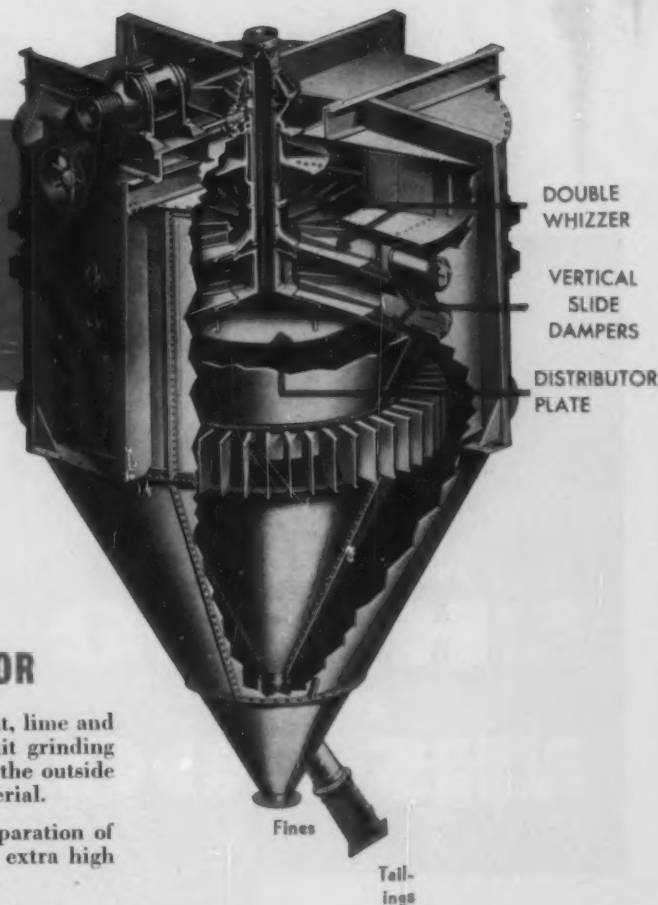
*"Flight Leader"  
of Mechanical  
Air Separators*

## RAYMOND Double Whizzer MECHANICAL AIR SEPARATOR

It is the standard unit for classifying cement, lime and other non-metallic minerals in closed circuit grinding operations. Fineness easily regulated from the outside for obtaining desired classification of material.

The double whizzer feature gives closer separation of the fines with cleaner tailings, and insures extra high capacities in the extremely fine grades.

For close control of particle sizes and maximum surface areas, you can depend on the Raymond Mechanical Air Separator for consistent and economical results.



The Raymond Double Whizzer Air Separator is also economically adapted for classifying many different materials, including gypsum, slate dust, various dry clays, graphite, limestone, talc, silica and practically the whole range of non-metallic minerals, chemicals and manufactured products.



**SINGLE  
WHIZZER  
AIR SEPARATOR**  
Diameters:  
4' to 18'



**30-INCH AIR  
SEPARATOR**  
For small  
commercial  
use or lab-  
oratory work



**LABORATORY  
AIR  
SEPARATOR**  
For classifying  
test samples

**Combustion Engineering Company, Inc.**

Sales Offices in Principal Cities — Canadian Combustion Engineering Corp. Ltd. Montreal

# With Degree in Power

Models  
**NH-600**  
and  
**NHS-600**

**CUMMINS**  
*Dependable*  
**DIESELS**

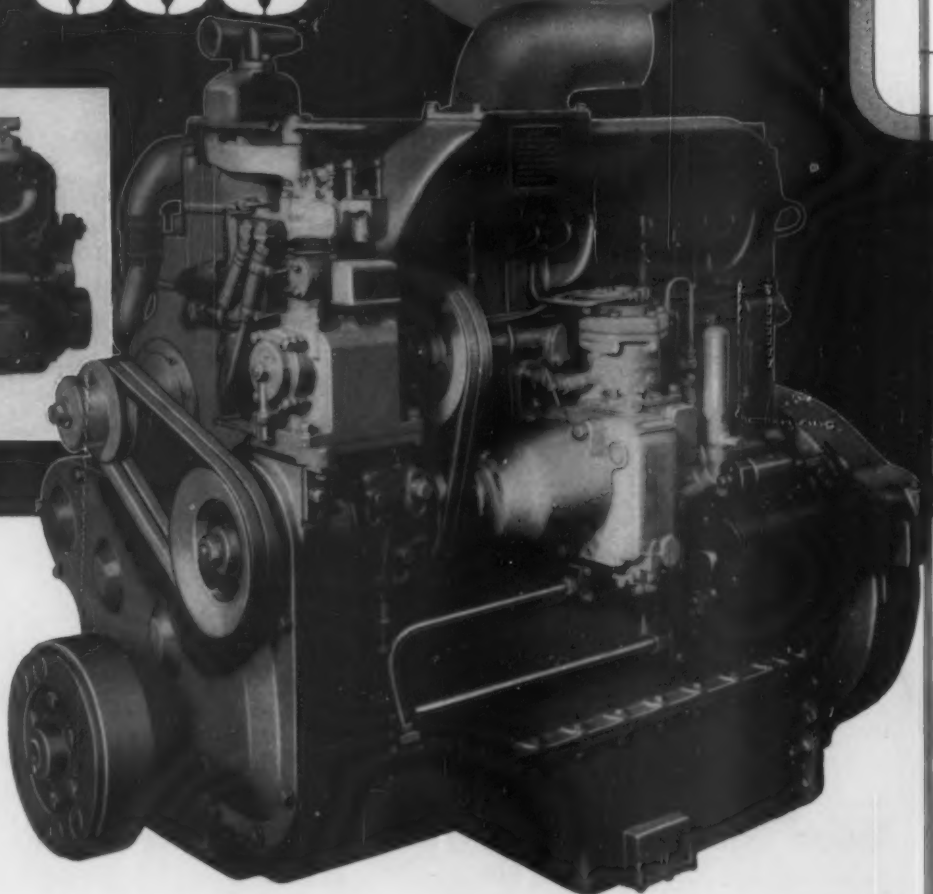


SINCE 1918...PIONEER OF PROFITABLE POWER  
THROUGH HIGH SPEED DIESELS



**200 hp.**

Model NH-600, 200 hp. at 2100 rpm. (maximum). Designed for heavy-duty automotive, industrial and marine service. For specifications, see table on opposite page.



Combining  
original high  
dependability  
The "so  
diesel...  
sole perfor  
The "so  
and exhaust  
refinement  
power c  
our tough  
containing  
Cummins  
206-21 to

Model	No. of Cyls.
H	6
HS	6
NH	6
NHS	6



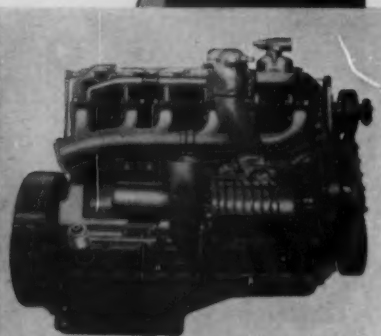
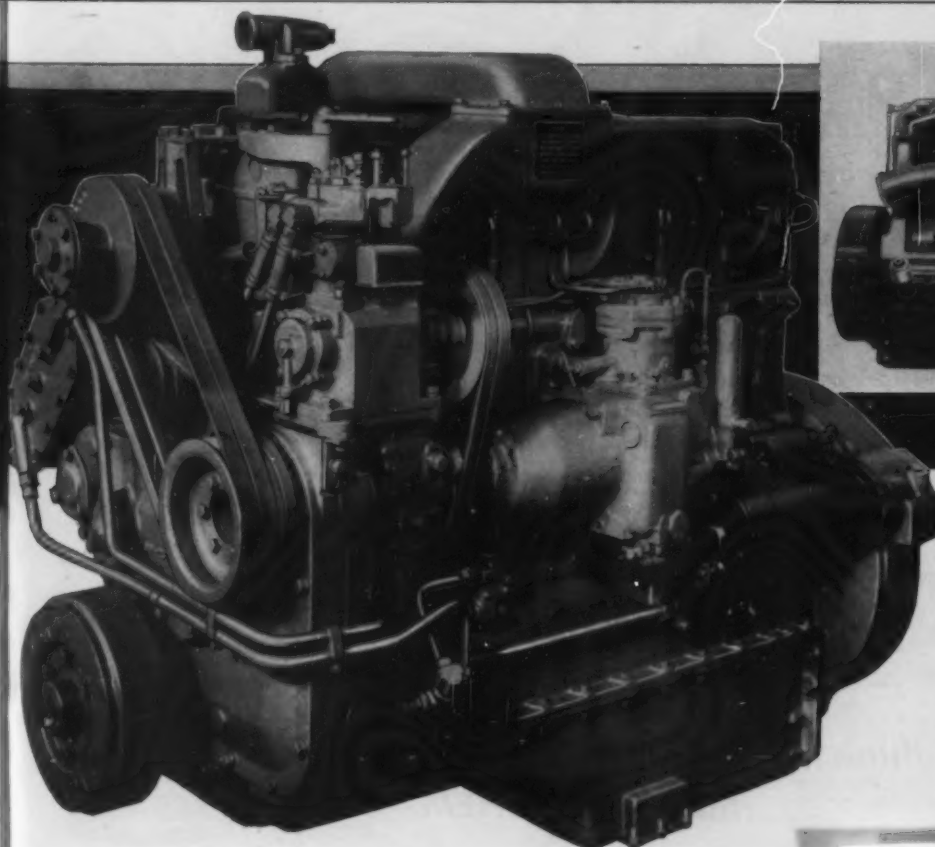
Combining "something old and something new," Cummins—builder of the original high speed diesel—now introduces two additions to the line of Cummins Dependable Diesels: Models NH-600 and NHS-600.

The "something old" is the basic design of the well-known Model H Cummins diesel . . . a design proved sound by a 12-year demonstration of low-cost, dependable performance in all types of heavy-duty applications.

The "something new" in NH and NHS Cummins Diesels includes dual intake and exhaust valves, higher rpm., larger piston displacement and many other refinements that will give you "more power per pound" and the Nth degree of power efficiency . . . that will assure increased payloads and higher profits on your *tough* jobs—automotive, industrial or marine. A comprehensive brochure containing complete specifications and engineering data on Series NH and NHS Cummins Dependable Diesels is now available. Write for your copy of Bulletin 206-21 today. CUMMINS ENGINE COMPANY, INC., Columbus, Indiana.

Model	No. of Cyl.	Bore and Stroke	Displacement (cu. in.)	HP. (Maximum)	RPM. (Maximum)	Weight	Weight per Horsepower	Dimensions
H	6	4 $\frac{1}{8}$ " x 6"	672	150	1800	2165	14.43	57 $\frac{3}{16}$ " x 46 $\frac{1}{2}$ " x 30 $\frac{1}{4}$ "
HS	6	4 $\frac{1}{8}$ " x 6"	672	200	1800	2580	12.9	58 $\frac{3}{16}$ " x 46 $\frac{1}{4}$ " x 29 $\frac{3}{16}$ "
NH	6	5 $\frac{1}{8}$ " x 6"	743	200	2100	2500	12.5	58 $\frac{3}{16}$ " x 49 $\frac{1}{16}$ " x 28 $\frac{7}{8}$ "
NHS	6	5 $\frac{1}{8}$ " x 6"	743	275	2100	2850	10.36	60 $\frac{3}{16}$ " x 48 $\frac{13}{16}$ " x 32 $\frac{3}{8}$ "

\*Weights and dimensions are for engines as designed for automotive application (as illustrated) and will vary with units designed for industrial and marine service. Weights are based on minimum use of light weight materials.

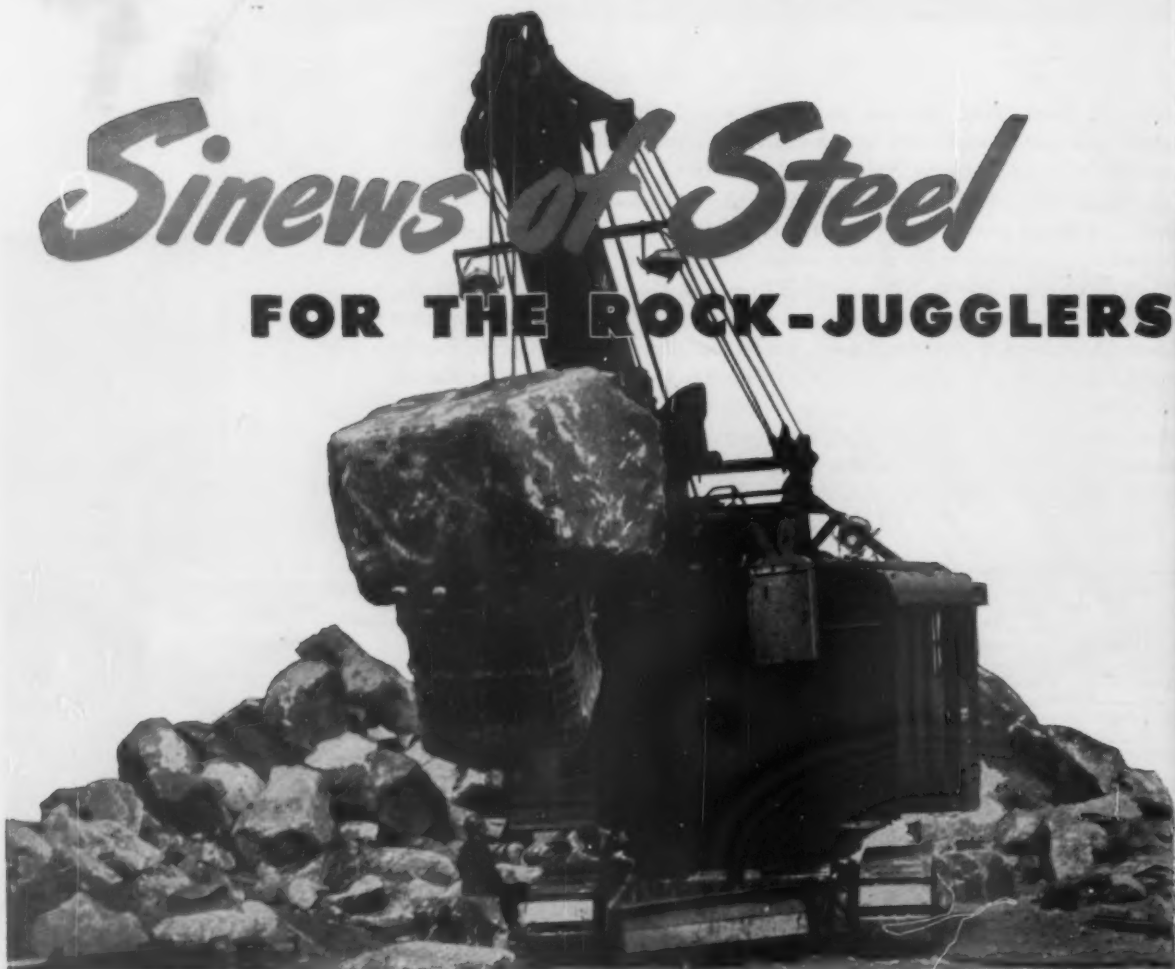


**275 hp.**

Supercharged Model NHS-600, 275 hp. at 2100 rpm. (maximum). Designed for heavy-duty automotive, industrial and marine service. For specifications, see table above.

# *Sinews of Steel*

## FOR THE ROCK-JUGGLERS



The stone you see poised on the dipper weighs more than two tons per cubic yard. Yet the powerful shovel seems to handle it like a pebble.

The shovel in the picture was delivered equipped with Bethlehem Wire Rope. It's a bread-and-butter application . . . nothing spectacular, but one that demands the best wire rope you can buy. When a shovel is rigged with Purple Strand (Bethlehem's top-grade rope), its lines are equipped to withstand the grief that's a daily

feature of quarry and excavating work.

If your job calls for a highly flexible rope, designed for easy curving around sharp bends, ask for Purple Strand Form-Set. A Form-Set rope is one that's been preformed; relieved of internal tension that sometimes shortens working life. But increased life is not the only advantage. Preformed rope is relaxed, supple; it's easy to handle, easy to rig, easy to spool.

Bethlehem craftsmen are old, experienced hands at wire-rope

making. And Bethlehem representatives are thoroughly familiar with conditions in the field, so that their recommendations are well worth considering. Before you rerig your shovel, derrick, or crane, see one of our men. Some of his tips may save you time and money.

**When you think WIRE ROPE  
... think BETHLEHEM**



**AIR  
PLUS**

**JAEGER COMPRESSOR**



VALVED WITH "TOUGH SWEDISH TWINS" FOR  
AIR PLUS C-O-O-L-N-E-S-S . . . EXTRA BIG,  
AIR-ANIMATED, AND COMPLETELY ACCESSIBLE!



The low temperature and minimum of oil vapor and condensation in the air delivered by "Air Plus" Compressors are evidence of the efficiency of Jaeger's "Tough Swedish Twin" Valves, horizontal fin-cooled cylinder design and an inter-cooler system which automatically unloads and drains during every idling period. All sizes, 60 to 500 feet.

THE JAEGER MACHINE COMPANY, COLUMBUS 16, OHIO



"FLEET-FOOT"  
Crane-Loaders



"SPEEDLINE"  
Concrete Mixers



"SURE PRIME"  
Contractors Pumps

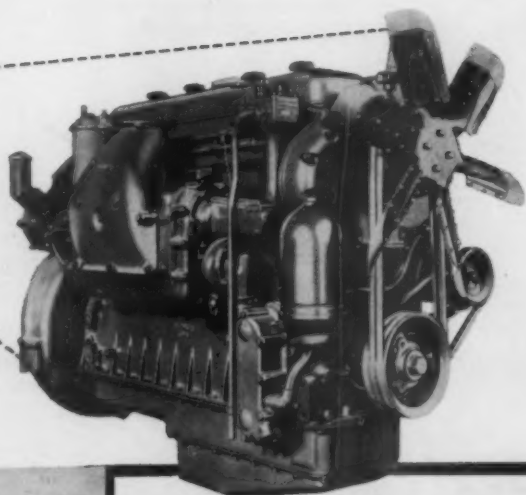
**JAEGER**  
*Engineered* EQUIPMENT

JAEGER-LAKEWOOD SPREADERS, FINISHERS AND BITUMINOUS  
PAVERS, FORMS, FORM TAMPERS—"DUAL-MIX" TRUCK MIXERS,  
AGITATORS—JAEGER HOISTING ENGINES, TOWERS

# WATCH 2-CYCLE!

## The Modern Diesel for Modern Operators

Keep your eyes on 2-cycle Diesel tractors and motor graders! Out to smash all operating records . . . these units will play an important part in speeding up and cutting the cost of stripping, road-building, cleaning up. When they are working in your territory . . . check their performance . . . satisfy yourself that 2-CYCLE is the kind of power you want.



### WHAT 2-CYCLE DIESEL POWER MEANS:



#### TO A TRACTOR

It means plenty of drive! Every down stroke of the piston is a power stroke. It means smoother power—maintains high torque over a wide speed range. It means faster power—there is quick pick-up . . . less gear-shifting . . . high-speed operation. It means thrifty power. Unit injectors simplify fuel system, reduce maintenance cost—fuel is thoroughly atomized, burns completely and develops maximum power.



#### TO A MOTOR GRADER

It means power to move more material. Extra dirt-moving capacity is built into the A-D Motor Grader. You can handle the heaviest kind of work—from deep, tough scarifying to high, heavy, bank cuts. You get a smoother job, too—has the reserve power to carry you through tough cuts with fewer blade adjustments. Gets the job done faster—works in a higher gear!

KEEP AN EYE ON  
THE FUTURE  
BUY AND KEEP  
WAR BONDS

# ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.



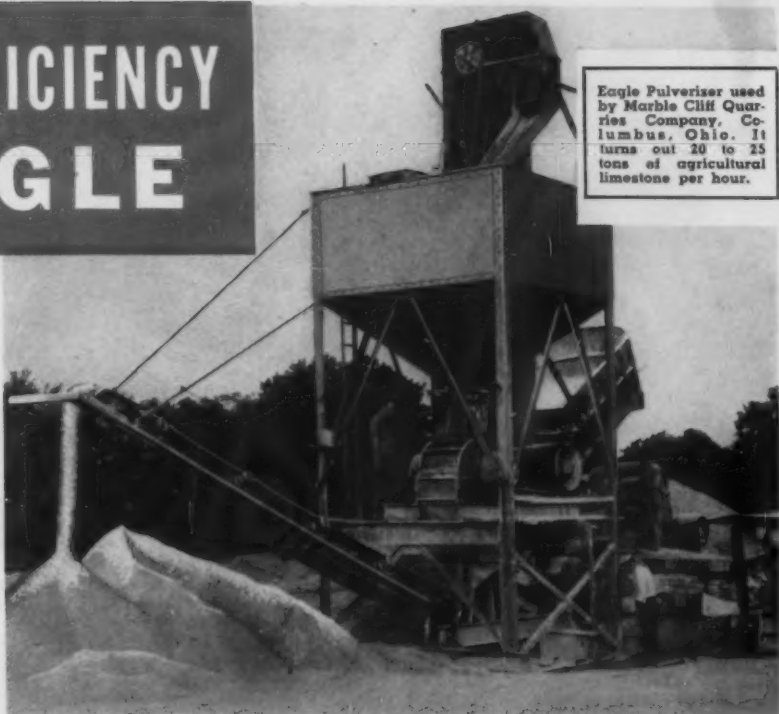
# 7-POINT EFFICIENCY in one EAGLE

## Impact Breaker and Pulverizer

• Through its seven points of efficiency and other features the Eagle Impact Breaker is performing many notable jobs today on agricultural limestone and cubical shaped commercial aggregates.

The Eagle is a modern, streamlined unit, operating with heavy, reversible, free-swinging manganese steel hammers, having four adjustments for long wear. It is a gadget-free crusher. Its one-piece electric-welded steel plate frame provides the utmost strength, yet eliminates heavy castings. It gives quick reduction to the sizes demanded by today's and tomorrow's markets. Investigate its outstanding features now!

## EAGLE JAW CRUSHERS



Eagle Pulverizer used by Marble Cliff Quarries Company, Columbus, Ohio. It turns out 20 to 25 tons of agricultural limestone per hour.

Efficiency through: (1) One-piece welded frame, (2) Easily adjustable, heavy manganese steel breaker plate, (3) Heavy, reversible manganese steel hammers, (4) SKF bearings, (5) Extra heavy screen bars, (6) Special alloy steel shaft, and (7) Easy accessibility. Form 1043 describes these and other features.



## LOADS 2 to 3 TONS PER MINUTE

The Eagle Truck-Mounted Loader is the high speed loader. Its speed enables trucks to make more pay loads per trip. Recently an Eagle Loader was clocked on a test job. Two minutes after it finished loading a pile of material it was at another stock pile 400 yards away, loading again at full speed. All operations are easily performed by one man. Get details in Form 644.

Rugged simplicity is the outstanding characteristic of the line of Eagle low-feed-opening Jaw Crushers. Their strong rigid construction, one-piece welded steel frame, and a few moving parts insure years of dependable, trouble-free service. Details are given in Form 144. Write today for your copy.

**EAGLE CRUSHER COMPANY, Inc.**  
**GALION, OHIO**



# Jones

## HERRINGBONE SPEED REDUCERS

Catalog No. 70 of Jones Herringbone Reducers presents a vast amount of data relating to Herringbone Reduction Units. Illustrations show a broad range of herringbone reducer applications, and technical information shows how to select reducers for all conditions of service in accordance with the A.S.M.E. recommended practice.



• This view of a Jones Triple Reduction Herringbone Speed Reducer typifies a line that is noted for advanced design, superior materials and precision workmanship.

**J**ONES Herringbone Gear Speed Reducers are built in a wide range of ratios and ratings to cover every requirement. Single (Type SH) reducers in standard ratios range from 1.25 to 1 up to 11 to 1 in ratings from 1.3 to 440 H.P. Double (Type DH) reducers are built in standard ratios from 10.9 to 1 up to 72 to 1 in ratings from 0.5 to 275 H.P. The triple reduction reducers (Type TH) cover a range of ratios from 86.9 to 1 up to 355.8 to 1 in ratings from 0.3 to 78 H.P.

All these reducers have heat treated gears, ground shafts and are mounted with anti-friction bearings throughout. Cast Iron bases are available for all variations of motor assembly.

**W. A. JONES FOUNDRY & MACHINE CO.**  
4447 Roosevelt Road, Chicago, Illinois



• Jones Reducer on a vertical mill elevator head shaft drive.



• Double Type Jones Herringbone Speed Reducer driving kiln in cement plant.



• Jones Speed Reducer on a feeder drive in cement mill.

# TRAXCAVATE!

## It's the MODERN Low - Cost, Material - Handling Method

TRAXCAVATORS, the dependable tractor shovels, are proving their ability, daily, to cut costs in quarries, pits and plants. They combine the usefulness of a shovel, loader, scraper, bulldozer, etc. . . . do tough digging work, load in the quarry or pit . . . strip overburden, carry and stockpile, maintain haulage roads, remove snow, do drawbar work. Bulldozer Blade and other attachments are available to further increase their usefulness. There's a choice of models, with bucket sizes from  $\frac{1}{2}$  to  $2\frac{1}{2}$  cubic yards — each one a balanced unit with the rugged "Caterpillar" track-type tractor by which it is powered. Learn how other operators are cutting costs with TRAXCAVATORS — write us for literature and data, and name of nearest Trackson — "Caterpillar" dealer. TRACKSON COMPANY, Milwaukee 1, Wisconsin.

UNDERGROUND  
LOADING

STRIPPING  
OVERBURDEN

STOCK-  
PILING

LOADING  
GRAVEL

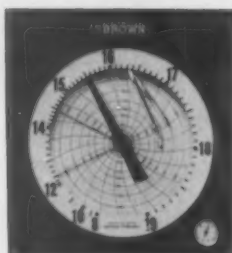
# TRAXCAVATOR

The Original Tractor Excavator

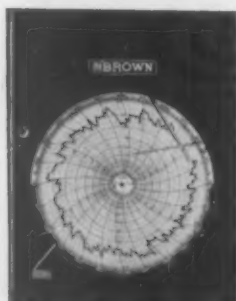
# They Assure Greater Production **PLUS** LOWER OPERATING COST



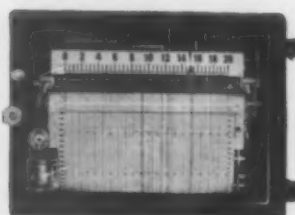
Brown Radiamatic Potentiometers



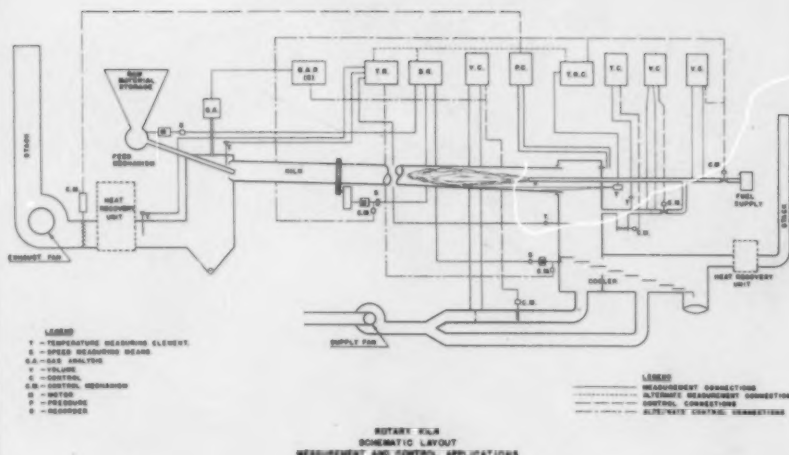
Brown Electronik Potentiometers



Brown Flow Meters



Brown Recording Potentiometers



INDUSTRY'S widespread preference for Brown Instruments and Minneapolis-Honeywell controls results, in part, from their unquestioned reliability for precision measurement and control.

Equally important is the skill with which they are engineered to increase production, and to lower operating costs of rotary kilns.

Let a Brown engineer help you select the instruments best suited to your requirements.

Among them are:

**BROWN ELECTRONIK POTENTIOMETERS** for measuring the temperatures of kiln wall or product.

**KILN PRESSURE CONTROLLERS** for maintaining constant draft and temperature distribution.

**FLOW METERS** to record and control the volume of fuel and air.

**PYROMETERS AND THERMOMETERS** to measure temperatures of waste gases and preheated air.

**TACHOMETERS** to record speeds of feeders, coolers, and kilns.

These instruments can be individually applied or co-ordinated as a complete control system. Write for catalogs to THE BROWN INSTRUMENT COMPANY, a division of Minneapolis-Honeywell Regulator Company, 4444 Wayne Avenue, Philadelphia 44, Pa. Offices in all principal cities. 119 Peter St., Toronto, Canada—Wadsworth Road, Perivale, Middlesex, England—Nybrokajen 7, Stockholm, Sweden.

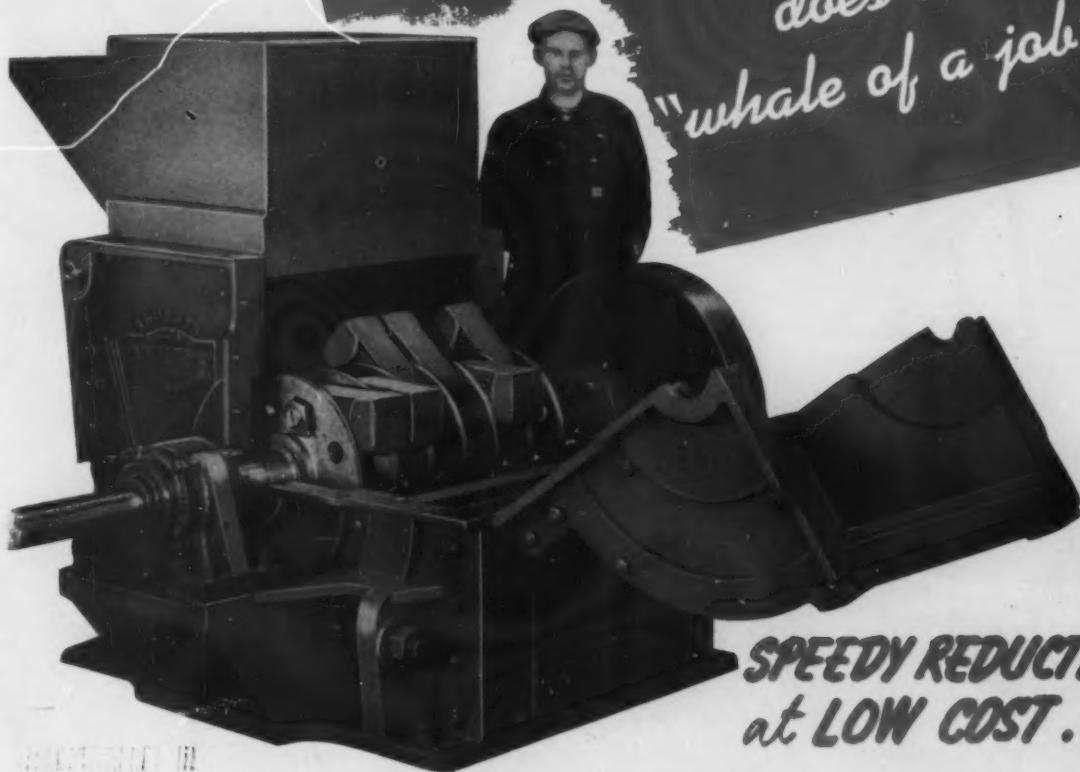
INSTRUMENTS BY **BROWN** CONTROLS BY

**Honeywell**



# ONE "SLUGGER" ..

*does a  
"whale of a job"*



**SPEEDY REDUCTION  
at LOW COST...**

The above open view clearly shows some of the outstanding "Slugger" features. Notice the heavy-duty manganese steel hammers, 1" thick liners and breaker plates, the powerful drive shaft, the dust-tight waterproof housings on two heavy-duty, self-aligning roller bearings. These and other features are reasons why you can rely on the "Slugger" to reduce more tonnages at low operating costs.

ONE Williams "Slugger" does such a thorough job that it eliminates the need for other primary or secondary crushers. It will reduce stone weighing up to 75 and 100 pounds to 1 1/4", 3/4", or agricultural limestone in one operation.

"Sluggers" are built of the strongest materials and by themselves do a whale of a reduction job, whether the product desired is specification agstone or cubical-shaped aggregates free from slivers or elongated particles.

The "Slugger" Crusher and Pulverizer gives you not only speed, but also 100% efficiency and economy. Every producer, whether large or small, can profitably install a Williams Crusher. Write for information today.

#### WILLIAMS FINE GRINDING EQUIPMENT WITH AIR SEPARATION

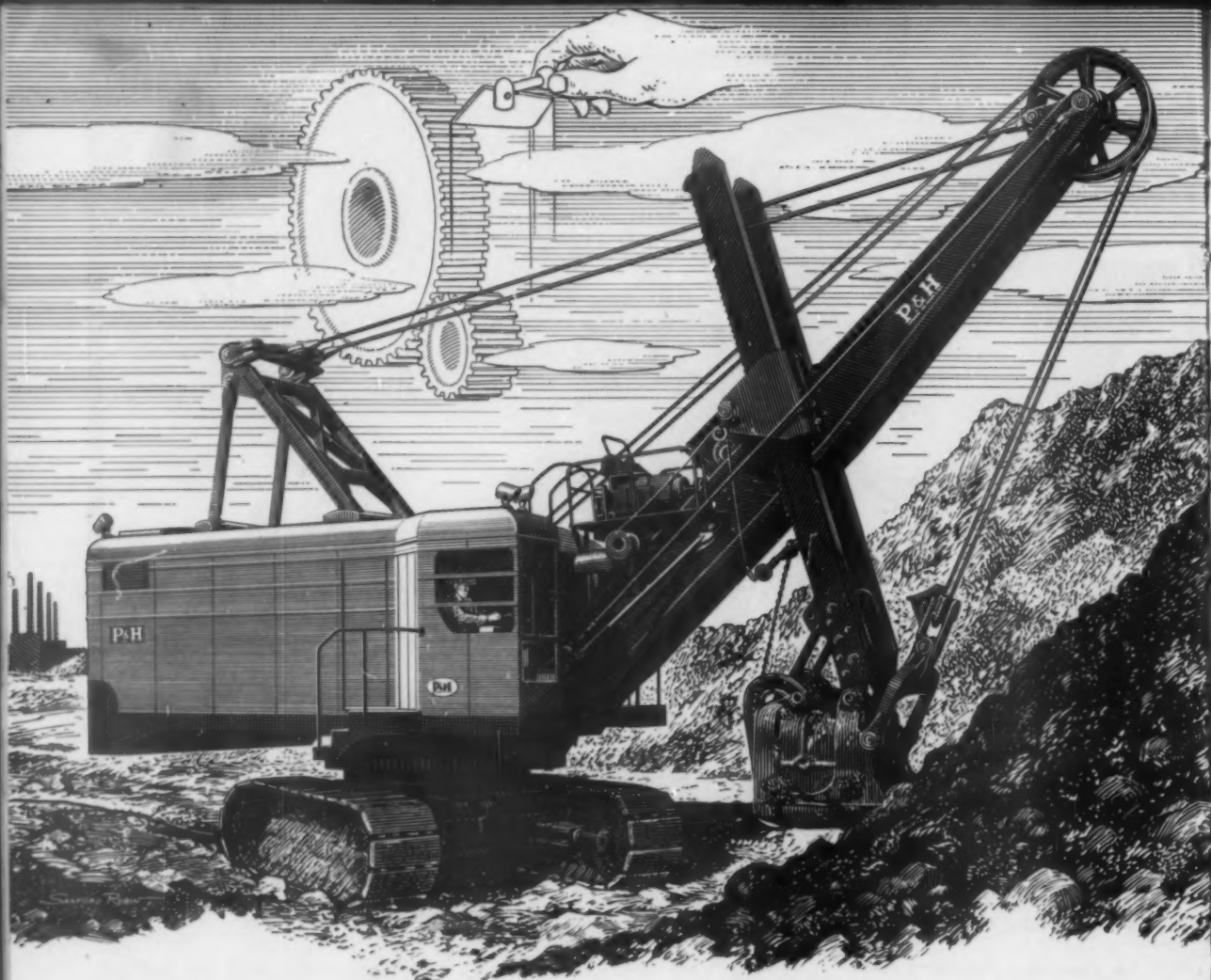
Write today for our Bulletin No. 621 on how to get faster, more efficient fine grinding of limestone, lime, coal, talc, etc. There is a Williams Roller Mill with Air Separator to fit your requirements. Finenesses from 100 to 400 mesh. We also build Impact Mills with Air Separation; Mechanical Air Separators for classifying finely ground material or taking the fines out of dry material.

#### THE WILLIAMS PATENT CRUSHER & PULVERIZER CO.

800 ST. LOUIS AVE.

ST. LOUIS 6, MO.





## We Switched Out The Trouble of Gear Shifting

Here is simplicity itself . . . absolute freedom from the mechanical complications of transferring power from one shovel motion to another.

Powered by its own heavy duty, shovel-type motor, the P&H propel machinery is completely independent of all hoisting and swinging motions. P&H's independent propel drive means simpler, easier move-ups . . . it means less trouble, less time out.

The change from dig to propel is instantaneous on a P&H Electric Shovel — accomplished by a mere flick of the master propel switch. Sliding gears and mechanical clutches with their complicated mechan-

isms are entirely eliminated — there is far more time for actual digging.

Here is another important advantage in the interests of lower tonnage costs for all kinds of open-pit operations. Behind it is P&H's 60-year leadership in applying electrical power to the movement of heavy loads.

P & H

HARNISCHFEGER

CORPORATION

EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

ELECTRIC  
SHOVELS

4465 West National Avenue  
MILWAUKEE 14, WISCONSIN

CRISTE • WELDING ELECTRODES • MOTORS

**THE GREATEST FORWARD STEP EVER MADE IN ELECTRIC SHOVEL DEVELOPMENT**

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Pump

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# Denver Equipment in the Fluorspar Field



## Mahoning Mining Co.

A 4-cell No. 30 Denver "Sub-A" similar to one used by Mahoning Mining Company, which has 76 Denver "Sub-A" Cells in its lead-zinc-fluorspar mill. Other

Denver machines purchased by this company include 6 Conditioners, 4 Thickeners, 10 Diaphragm Pumps, Reagent Feeders, Duplex Rake Classifier, 3 S.R.L. Sand Pumps, Laboratory Equipment.



## Kramer Mines, Inc.

The Kramer flowsheet was developed by Deco Test Lab.; mill layout was made by Deco Engineers; and Deco furnished all equipment including these Denver products: the 36"x21' Rotary Dryer shown here, Hydroclassifier, 2 Dia-

phragm Pumps, Ore Feeder, Ball Mill, 3 Vertical Sand Pumps, Conditioner, 18 Denver "Sub-A" Cells, Thickener, Fluorspar Filter and Reagent Feeders.



## Fluorspar Processing Company

A 4'x4' Denver Rotary Drum Filter at Fluorspar Processing Company which also has a Denver Thickener and Diaphragm Pump and 10 Denver "Sub-A" Cells. Denver Fluorspar Filter features eliminate blinding of filter media caused by fluorspar slimes and soap reagents.

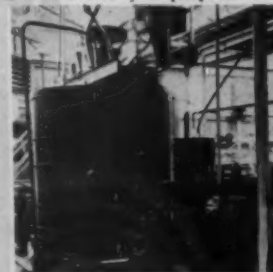
## Zuni Milling Company

Photo shows the 6'x4' Denver Ball Mill installation at Zuni Milling Company, which uses many Deco machines including 28 Denver "Sub-A" Cells, 2 Ore Feeders, Vi-

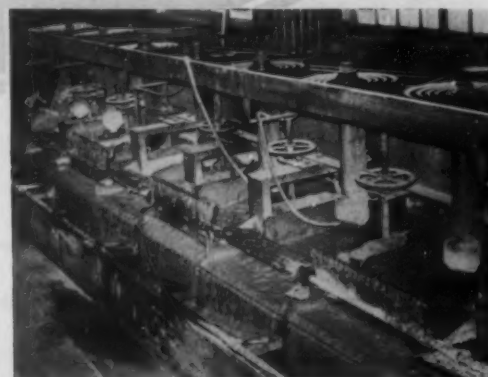


## Hillside Fluorspar Co.

This 5'x5' Denver Conditioner installation is in the Hillside Fluorspar Company Mill where the following Deco products are also used: Ore Feeder, Ball Mill, 18 Denver "Sub-A" Cells, Thickener, Dia-



phragm Pump, 4 Vertical Sand Pumps, 3 S.R.L. Sand Pumps, Reagent Feeders and Laboratory Equipment.



## If you are planning a mill...

... you, too can profit from Deco's complete engineering and equipment service: ore testing... equipment from "Feeder to Dryer"... field engineering service... mill layouts helpful engineering publications.

## Rosiclare Lead and Fluorspar Co.

Part of the 14 Denver "Sub-A" Cells in operation at Rosiclare Lead and Fluorspar Mining Co. Other Denver machines in this mill include a Ball Mill, Conditioner, Thickener, 2 Diaphragm Pumps, Vertical Sand Pump, Mineral Jig, and 2 S.R.L. Sand Pumps.



NEW YORK CITY 1, N.Y.: 4114 Empire State Bldg.  
CHICAGO 1: 1123 Bell Bldg., 307 N. Michigan  
MEXICO, D.F.: Edificio Pedro de Santa, Ganto 7

MIDDLESEX, ENG.: 493A, Northolt Rd. S. Harrow  
RICHMOND, AUSTRALIA: 530 Victoria Street  
JOHANNESBURG, S. AFRICA: 8 Village Road

TORONTO, ONTARIO: 45 Richmond Street W.

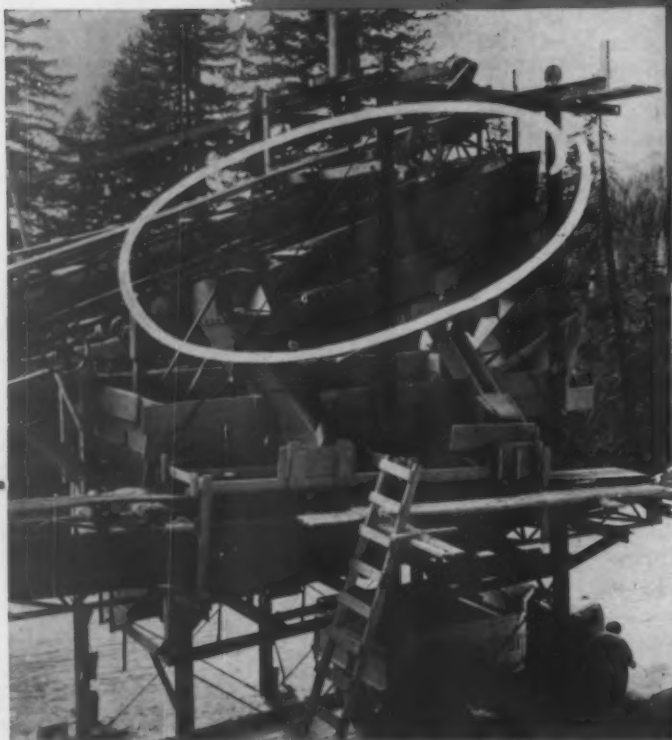


**DENVER EQUIPMENT COMPANY, 1400 17th St., Denver 17, Colorado**



## OUTSTANDING SCREENING PERFORMANCE UNDER

*Every*  
**IMAGINABLE  
CONDITION**



The 4' x 12' Triple Deck Simplicity Gyrating Screen shown in this Temporary Plant handles 2000 tons per day of 18" and under rock. Another user reported an increase of 50% in plant capacity merely by replacing its screening unit with a Simplicity of the same size.

- For the Navy CB's
- Up in Canada and Alaska
- Down in Mexico
- In Foreign Lands
- And at Home in Hundreds of Plants

*Simplicity*

**GYRATING SCREENS**

In the far-away corners as well as the cross-roads of the World, Simplicity Gyrating Screens have been used and have given the same highly satisfactory results. Each report of new installations and uses confirms the testimony of long-time Simplicity users—that here is the screen that can be counted upon to give maximum tonnages of clean, accurately sized materials with low power

requirements and a minimum of maintenance. Standard features include a counterbalanced eccentric shaft; rubber-mounted screen corners, screens in four-way tension over doubly crowned surface, dust sealed Alemite lubricated roller bearings; extra rugged construction; and rubber cushioned power. Write today for the complete facts.

**Simplicity**  
TRADE MARK REGISTERED

**ENGINEERING COMPANY  
DURAND, MICHIGAN**



# Power...

precedes progress

8<sup>th</sup> of a series  
contrasting early power  
sources with modern  
BUDA power. ★

**T**here was plenty of manpower in America in the 1800's. Nevertheless, mining and all other productive activities were limited by lack of the efficient, economical abundance of power that you have available today in the new BUDA Diesel Engines — the last word in modern power units.

#### Ordinary Diesels

High cylinder pressure produces sledge hammer blows that punish pistons, rods and crankshaft every power stroke.

#### BUDA Low Pressure Diesels

Prolonged "Low-Pressure" combustion delivers a smooth steady power stroke that cuts vibration and saves parts.

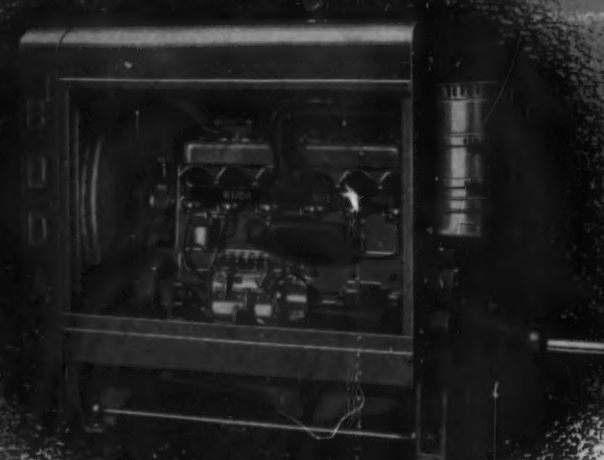


Write or wire for detailed information.

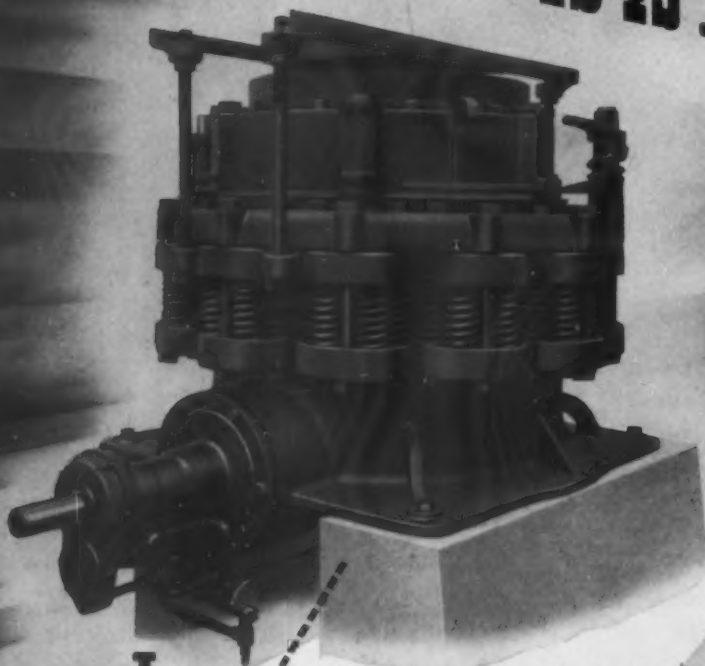
# BUDA

15428 Commercial Ave.

HARVEY (Chicago Suburb) ILLINOIS



**A Leader in 1926 ...  
Still a Leader in 1945 .....**



**T**he introduction of the Symons Cone Crusher in 1926 marked a new era in fine crushing operations. The revolutionary process of crushing of the cone was the greatest advancement ever made in the field of reduction crushing. No other type of crushing machinery ever received such ready acceptance. Its rapid and widespread use is unparalleled by any type of crushing equipment.

Today it is still the world's outstanding reduction crusher and is universally used by leading producers whose operations involve fine crushing. Continued improvements have been made to meet growing trends toward greater use of more finely crushed materials. Many early users of Symons Standard Cones have now installed Symons Short Head Cones to meet these changing demands. There are thousands of Cones now in service.

If your postwar planning includes increased output of the finer sizes, investigate the advantages of Symons Cones. Their selection for modern crushing plants everywhere is evidence of their satisfactory performance.

**NORDBERG MFG. CO.**  
MILWAUKEE 7, WISCONSIN

NEW YORK • LOS ANGELES • LONDON • TORONTO



**SYMONS CONE CRUSHERS**

# THREE OUTSTANDING DEVELOPMENTS:

## The Vanderwerp Recuperator for Rotary Kilns

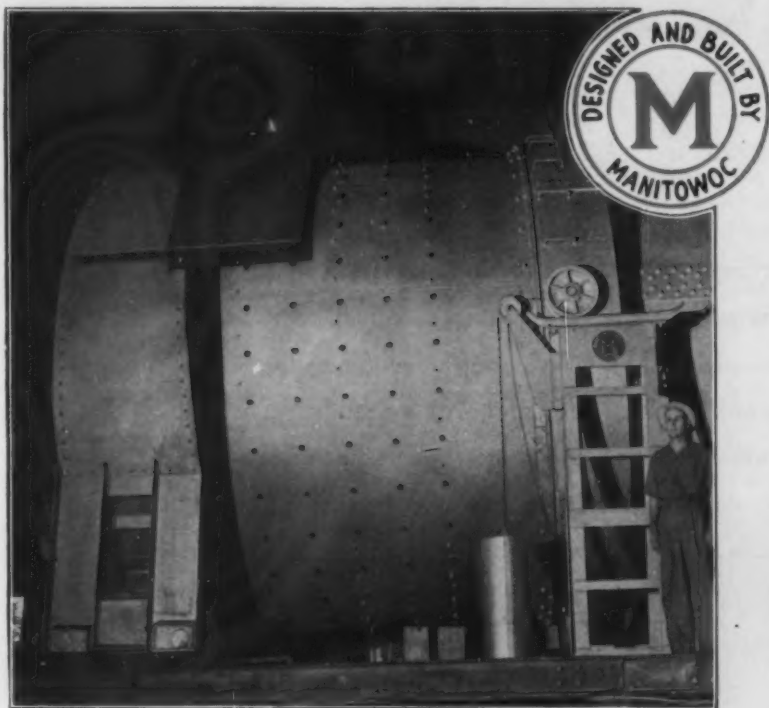
Insures immediate air  
quenching and maximum  
heat recovery.

## The Minogue Slurry Agitator

Provides thorough agitation  
and blending with minimum  
power and air consumption.

## The Minogue Kiln Feeder

The only practical device for  
introducing flue dust in the  
dry state.



Vanderwerp Type S Recuperator applied to Unit-Fired  
Rotary Cement Kiln 11 ft. x 400 ft.  
(Repeat Order)

The wide acceptance of the  
Vanderwerp Recuperator in the  
United States has led to im-  
portant installations in South  
America, Australia and the  
Philippines.

The demand for units of high  
capacity has resulted in our  
Type S design suited to kilns  
of maximum output. In all  
cases the Recuperator may be  
readily attached to an existing  
kiln, requiring the minimum of  
labor in erection, involving  
no foundations or brickwork  
and occupying minimum floor  
space.

## MANITOWOC ENGINEERING WORKS

Division of

GENERAL OFFICES AND PLANT  
Manitowoc, Wisconsin

Manitowoc Ship Building Company

CHICAGO OFFICE  
131 E. Wacker Drive

# Better in the Long Run



In spite of prolonged shortages of vehicles, replacement parts and personnel, the motor truck transportation industry successfully has performed a tremendous task in supplying the nation's critical needs swiftly and economically. Now, a limited number of Ward LaFrance heavy-duty trucks for civilian use is available... trucks designed and engineered to respond quickly under all conditions and loads.

Our twenty-five years of truck manufacturing, plus the experience gained in producing specialized vehicles of war, enables us to build better civilian trucks capable of meeting every demand with reliability and low maintenance cost. Remember that, in the long run, trucks engineered to do a *specific* job do it better! Why not investigate by writing our Sales Department today?



## WARD LAFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC. • ELMIRA, NEW YORK



# AMERICAN

"The Shield of Efficient Crushing"



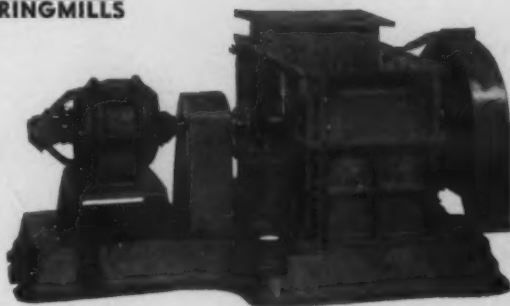
## POST-WAR CRUSHER

*with an Achievement-Earned  
Service Record*

**Y**EARS before the war started AMERICAN PULVERIZERS had earned an outstanding reputation for greater production, variety, and quality of output at low cost. Now, during the war years they have continued to make good their reputation. AMERICANS that have already seen years of service continue to give maximum reduction efficiency without breakdowns or maintenance. And by their past and present performances, you should make an AMERICAN your post-war choice.

### AMERICAN RINGMILLS

Modern producers consider AMERICAN Rolling Ring Crushers an asset in their reduction department. They feature low first cost, low power consumption, and insure a uniform cubical product with a minimum of fines. This machine is easily dismantled, moved and re-assembled.



# PULVERIZERS

AMERICANS deliver to exacting requirements, whether materials desired are siliver-free coarse aggregates, round-grained stone sand, or agricultural limestone. Special features include manganese steel rings or hammers of the original AMERICAN design, a heavy alloy steel shaft, and SKF spherical roller bearings. Let us show you how you can benefit by installing an AMERICAN. Write today for information.

**HIGH OUTPUT**

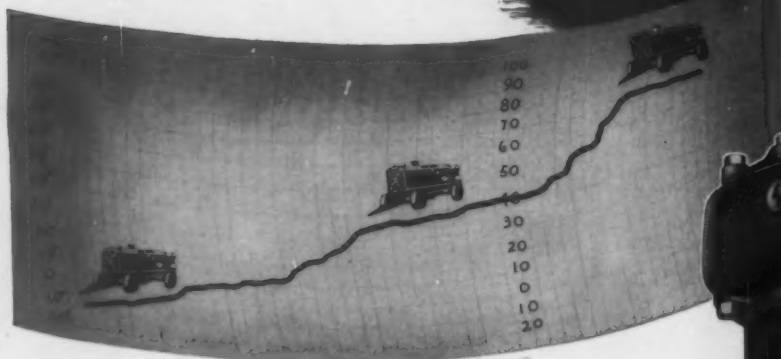
**LOW COST**



## AMERICAN PULVERIZER CO.

1245 MACKLIND AVENUE . . ST. LOUIS 10, MISSOURI

# Never mind the **WEATHER**



## ... with an **ALL** Water-Cooled Portable!

Hot weather . . . cold weather, it makes no difference in the operating efficiency of a Gardner-Denver "all water-cooled" Two-Stage Portable Compressor. Its completely water-jacketed compressor cylinders keep cool in summer . . . warm in winter. Temperature or altitude extremes do not reduce its capacity or limit its operation. Hot or cold, it keeps right on delivering.



Water-Jacketed Cylinder

"All water-cooling" has other exceptional advantages. Discharge temperatures are lower... effecting considerable savings in oil consumption and in valuable air hoses. High efficiency is sustained . . . air output is higher . . . horsepower requirements lower. And Gardner-Denver "all water-cooled" portables require no pampering, regardless of operating conditions.



### GARDNER-DENVER SINKERS

Popular with contractors and operators alike, Gardner-Denver Sinkers are noted for their smooth, easy riding characteristics and perfect balance, assuring more footage per shift.



For complete information on Gardner-Denver Portable Compressors and Sinkers, write for illustrated bulletins. Gardner-Denver Company, Quincy, Ill.



# GARDNER-DENVER

Since 1859



**MAKE YOUR  
POST-WAR PLANT  
MORE EFFICIENT**

## STURTEVANT AIR SEPARATORS

**STURTEVANT  
PACE-MAKERS IN  
PLANT EFFICIENCY**



### RING-ROLL MILLS

For medium and fine reduction (10 to 100 mesh), hard or soft materials. Very durable, small power. Operate in closed circuit with Screens or Air Separator. Open dust accessibility. Many sizes, large or small capacities. No scrapers, plows, pushers, or shields.



### MOTO-VIBRO SCREENS

Screen anything accessible. Classified vibrations. Built construction—any capacity. Open dust accessibility. Open and closed models with or without feeders. Many types and sizes—range of work 1/2 in. to 60 mesh.

Every piece of Sturtevant equipment is built with the definite case that has gone into its 35 years of making custom-made machinery. Accessibility to allow for quick, easy, and inexpensive repairs or for cleanouts is carried to the nth degree, as in the long run this pays the dividends upon the slight extra cost of construction. That is why practical operators appreciate Sturtevant equipment, and why many will have no other.



### JAW CRUSHERS

For coarse, intermediate and fine reduction of hard or soft substances. Heavy or light duty. Cam and Roller action. Special crushers for Run-of-quarry. Several types, many sizes.



### CRUSHING ROLLS

For granulation, coarse or fine, hard or soft materials. Precision and uniform adjustments. Crushing shocks balanced. For dry or wet reduction. Sizes 24 to 36 in. Roller or Plain bearings. The standard for crushers.



### SWING-FLEDGE MILLS

For coarse and medium reduction (1" to 20 mesh). Open dust accessibility. Soft, moderately hard, tough or fibrous substances. Built in several types and many sizes.



### ROTARY FINE CRUSHERS

For intermediate and fine reduction (10" to 1/2"). Open dust accessibility. Soft or moderately hard materials. Excellent granulation. Excellent preliminary Crushers preceding Pulverizers.

**STURTEVANT  
MILL COMPANY**

HARRISON SQUARE

BOSTON 22

MASSACHUSETTS



***faster one-man  
operation ...  
greater  
mobility on  
rough ground***

## **G-200 LIGHT-WEIGHT WAGON DRILL**

**T**HE specially designed mounting enables the light-weight G-200 Wagon Drill to be moved readily and quickly over difficult terrain. Light but rigid tubular carriage frame is mounted on 3 roller-bearing wheels with smooth-riding pneumatic tires. Rotary air motor with graduated control — plus worm gear transmission and feed chain — assure steady feed, quick return and ample power for pulling tight steel. Chain-and-sprocket hand-operated hoist permits easy raising and lowering of drill carriage, while sliding cone allows rapid adjustments to ground conditions. The G-200 Wagon Drill is available with the CP-50 (3"), CP-60 (3½") or CP-70 (4") Drifters. Write today for complete data.

★★★★★★★  
PNEUMATIC TOOLS  
ELECTRIC TOOLS  
HYDRAULIC TOOLS  
ROCK DRILLS

**CHICAGO PNEUMATIC**  
TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

★★★★★★★  
AIR COMPRESSORS  
VACUUM PUMPS  
DIESEL ENGINES  
AVIATION ACCESSORIES



ASK THE HAMMOND MAN

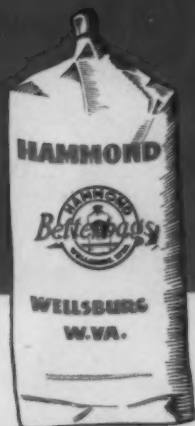
the ANSWERS  
to your postwar  
container problems



SEWN VALVE



PASTED VALVE



OPEN MOUTH

and types to fit your specific shipping needs

—ATTRACTIVELY PRINTED—

# HAMMOND MULTI-WALL BAGS

The exigencies of a wartime economy have established the utility of *Multi-Wall Bags* for packing many new products. They have *proved* themselves under the most severe shipping conditions.

Multi-Wall bags are the most practical, economical and sanitary packages available for shipment of heavy products needing complete protection.

**HAMMOND BAG & PAPER COMPANY**

Paper Mill and Bag Factory

Wellsburg, W. Va.

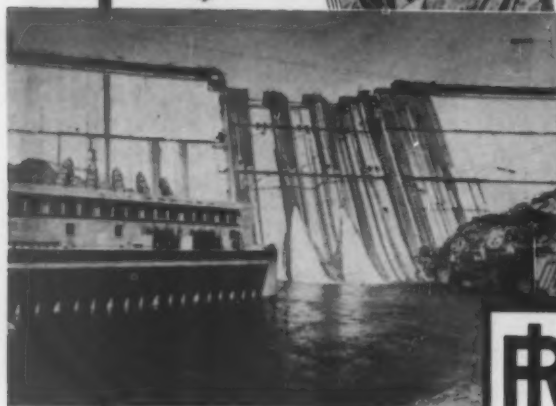
# 42

## INGERSOLL-RAND WAGON DRILLS

at Shasta Dam

← In 1939  
we said

In July 1944  
Shasta Dam  
began the  
production of  
150,000 kw. of  
electricity.



THE LARGEST NUMBER OF WAGON DRILLS  
EVER USED ON ANY ONE JOB . . . . .

All FM-2s With X-71 Drifters

Shasta Dam is the biggest rock job in the country today  
... about 2,000,000 cubic yards.  
The drilling on this project is a major problem, be-  
cause of the hard rock and uneven ground. 20-foot holes  
are required to get the necessary yardage.

Because of their past experience with many types of  
wagon drills, the contractors chose the Ingersoll-Rand  
FM-2 to do this job. They knew that it had the flexibility  
needed for drilling in the rough ground; the power and  
hole cleaning ability required to drill 20-foot holes in  
hard rock, and the sturdy construction necessary for low  
upkeep costs.

If you have a tough job of drilling to do, use FM-2  
Wagon Drills. They will also cut your costs.

**Ingersoll-Rand**  
11 BROADWAY, NEW YORK, N. Y.



### FM-2 Wagon Drills..

## Important Factors in Successful Completion of Shasta Dam.

FM-2 Flexibility and Deep-Hole Drilling Power will Save  
You Time and Money Too.

# Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

5-544

# PLYMOUTH . . .



*An Excellent Word for Performance!*

**"Plymouth Locomotives Are Doing Good Work For Us . . ."**

" . . . so good, that since we purchased our first Plymouth, we have added two more of the same size and several other larger models.

What better way is there to determine Plymouth performance and service than to read an endorsement of this kind from an enthusiastic user — The National Mortar & Supply Co., Gibsonburg, Ohio.

You, too, will find Plymouth's rugged construction, power, speed, low cost operation, the practical solution to your industrial transportation problem. Designed to meet every haulage need—*faster and at lower cost*—Plymouth Gasoline and Diesel Locomotives are built in sizes from 2½ to 80 tons.

If you want the full answer, the *right* answer to *economical* haulage, write today for complete data.



## PLYMOUTH LOCOMOTIVES

**GASOLINE, DIESEL, AND DIESEL ELECTRIC**

PLYMOUTH LOCOMOTIVE WORKS • Division of The Fate-Root-Heath Co., Plymouth, Ohio, U.S.A.

Here is  
the **Simple Reason**  
*Why*



# **GATES** *Synthetic Rubber* **V-Belts**

—Are Giving You Even **BETTER SERVICE**  
Than **Pre-War Belts** of **NATURAL RUBBER!**

NO ONE, before the war, had ever built a V-Belt that could stand the service now required by the Army's tanks, tractors, and self-propelled big guns. Gates has developed V-Belts that are now serving on army combat units all over the world—and has built these belts of synthetic rubber!

This fact is important to you now because every improvement developed by Gates for these Army belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

It is only rarely, of course, that improvements developed primarily for army combat use can be passed on immediately to the general user—but there are very good reasons why Gates has not been called upon to withhold these important V-Belt improvements from Industrial V-Belt users.

The plain fact is that no guns, no tanks, no airplanes can be produced unless V-Belts are supplied to drive the producing machines. It is equally clear that better V-Belts than ever before have been urgently needed to keep machines going on the forced-draft, war-production schedules that have had to be maintained 24 hours a day!

That is why Gates has been able to embody in the standard Gates Vulco Rope every V-Belt improvement which Gates specialized research has developed for use on the Army's motorized equipment—and that is why you are finding that your standard Gates synthetic rubber Vulco Ropes are today giving you better service than any V-Belts that were ever built before the war.

THE MARK OF  **SPECIALIZED RESEARCH**

**THE GATES RUBBER COMPANY**

Engineering Offices and Stocks in All Large Industrial Centers

# **GATES VULCO ROPE DRIVES**

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549 West Washington

**NEW YORK CITY 3.**  
215-219 Fourth Avenue

**ATLANTA 3, GA.**  
738 C & S National Bank Building

**LOS ANGELES 21, CAL.**  
2240 East Washington Boulevard

**DENVER 17, COLO.**  
999 South Broadway

**DETROIT 4, MICH.**  
8963 Grand River Avenue

**PORTLAND 9, ORE.**  
333 N. W. 5th Avenue

**DALLAS 2, TEXAS**  
1710 N. Market Street

**SAN FRANCISCO 3, CAL.**  
1090 Bryant Street



what **110** years

OF McLANAHAN EQUIPMENT  
RESEARCH MEANS TO YOU **NOW**



30" McLanahan Rock Master All Steel Single Roll Primary Crushing limestone from 3 yard bucket to 3/4" at the rate of 300 T.P.H.



21" Primary and 18" Secondary Single Rolls on Texas Flint.



Two pairs of 30" Heavy Duty Logs washing limestone in large Western Plant.



78" Electrically operated heavy duty reciprocating Plate Feeder.



Furthest South limestone plant in the United States with 36" Primary and 2 McLanahan Secondary Crushers.



Three Heavy Duty 25" and 35" Double Logs on this Alaskan dredge washing gold bearing clays.



Believe It or Not. One 18 x 36" McLanahan Steelstrut Secondary Single Roll Crusher replaced four of these gyratory machines on hard limestone in West Virginia.



Three 30" Heavy Duty Double Logs with McLanahan Drag washing sand and gravel in large Mid-Western Plant.

Since 1835 McLanahan has been building, developing and improving all types of equipment for more efficient production of Sand and Gravel, Crushed Stone, Lime, Cement, etc. This accumulated experience and research, in every McLanahan Machine, assures you dependable, exacting performance.

Whether you need or plan to buy new equipment now or not, it will be well worth your while to check the various features, sizes and types of McLanahan equipment that are making possible increased volume and quality of production at lowest cost.

**McLANAHAN & STONE CORPORATION**  
HOLLIDAYSBURG, PENNSYLVANIA

**Pit, Mine and Quarry Equipment Headquarters**  
Since 1835

# 7 YEARS WITHOUT A BREAKDOWN OR MACHINE REPAIR



Mr. George W. Brown,  
Town Superintendent,  
Walworth, New York.

Dear Mr. Brown:

Just a few lines to thank you for writing.

It is gratifying to note that you have yet to buy your first actual repair parts for your General Excavator, particularly since this machine was shipped more than 7 years ago. Most folks would expect that a machine of that age, and with the service it has given, would be pretty well worn out — or would have required thousands of dollars in repair expenditures.

In all modesty, Mr. Brown, we do take pride in the way Generals can "dish it out" and "take it," and here's hoping you continue to have the best of luck with your machine. Here too, incidentally, is our promise that after the war, Generals will be better than ever!

Cordially,

THE GENERAL EXCAVATOR COMPANY,

Don B. Smith, Sales Manager

DBS/fb

Behind this letter is the all-out performance of a General Excavator which has been in all-around municipal service since 1937 . . . with the first repair part yet to be purchased! Here is strong basis for including GENERAL-built equipment in YOUR postwar plans.



GEORGE W. BROWN  
Town Superintendent  
Walworth, N. Y.

... "during national emergency I've personally operated and cared for this General Excavator . . . surprised to find so rugged a machine so easy to handle and keep adjusted . . . in addition to loading bank-run gravel, we use it on tough highway widening jobs — uprooting trees, breaking hard-pan rock . . . yet to encounter job too tough for The General."



AND WATCH

## The General "Type 10"

the revolutionary Machine of Tomorrow, when the swing is to postwar business. Crane-shovel-dragline all in one, this advanced design rubber-tired, one-man, one-engine rig will give you a new lease on profit opportunities in your territory. Write for details today!

THE  
**OSGOOD**  
COMPANY  
SHOVELS, DRAGLINES  
CRANES  
CRAWLER & WHEEL MOUNTS  
DIESEL, OIL, GAS, ELECTRIC

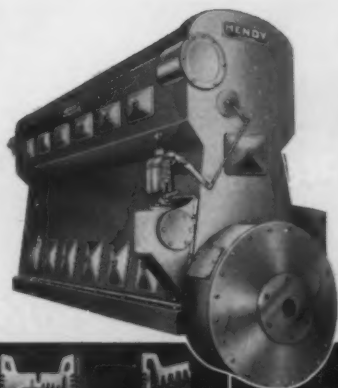
Associated with The Osgood Company

**GENERAL**  
EXCAVATOR CO.

MARION, OHIO

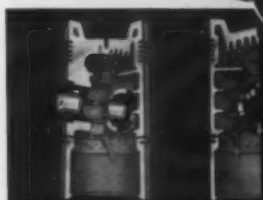
**GENERAL**  
CRANES, DRAGLINES  
AND SHOVELS

DIESEL, GAS, ELECTRIC



# 22 PROVEN DIESEL FEATURES

ONLY HENDY COMBINES THEM ALL



1. Oil-cooled pistons increase piston-ring life.



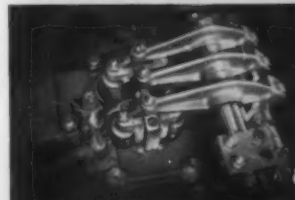
2. Unit fuel injectors eliminate high-pressure lines.



3. Dual valves reduce valve maintenance.



4. Overhead camshaft eliminates push-rod linkages.



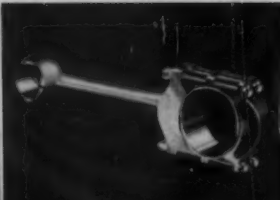
5. Hydraulic tappets maintain correct clearances.



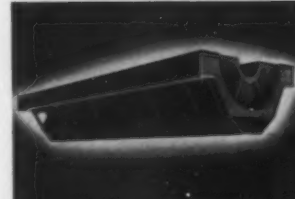
6. Large-diameter crankshaft for reliability.



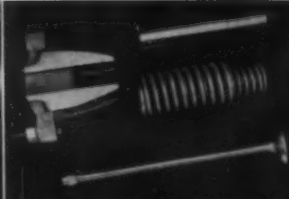
7. Simplified controls aid easy operation.



8. Large bearings in connecting rods reduce maintenance.



9. Welded steel bedplate assures great rigidity.



10. Positive valve mechanism assures smooth action.



11. Front-clutch power take off for auxiliaries.

## OTHER FEATURES not pictured here

12. Removable main bearings
13. Double rear main bearings
14. Jet-action head cooling
15. Cage-type relief valves
16. Uniform-tension camshaft drive
17. Air-operated starting valve
18. Large-capacity cooling pumps
19. Mechanical or hydraulic governor
20. Water-cooled exhaust manifold
21. Fresh-water cooling
22. Full pressure lubrication

THE important fact about Hendy Diesels is that they combine, for the first time in a single engine, 22 of the most modern design features. Every one of these features was selected by Hendy engineers as a proven and practical development in Diesel design.

Only Hendy Diesels have all twenty-two! Examine the full list above—you are undoubtedly familiar with some—you'll want to know more about the others. Send for data available now on 6 or 8 cylinder Hendy Diesels from 350 to 675 hp, designed for a wide variety of industrial uses or with generators as complete electric plants.

**JOSHUA HENDY IRON WORKS**  
ESTABLISHED 1836  
SUNNYVALE, CALIFORNIA

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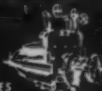
65-8-10



TURBO-GENERATORS



REDUCTION GEARS



STEAM TURBINES



DIESEL ENGINES



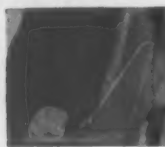
- ★ Bucket Teeth, Lips and Runners
- ★ Bucket Sides and Bottoms
- ★ Latch Pins
- ★ Boom Sockets
- ★ Track Rollers
- ★ Track Tumblers
- ★ Track Pads

## Here are important shovel-saving applications for **STODY SELF-HARDENING**



### BUCKET TEETH AND LIPS

Stody Self-Hardening is generally applied on teeth and lips as stringer beads. When working in heavy rock or under similar conditions, beads running parallel to the flow of material withstand terrific shock and provide wear resistance comparable to solid deposits.



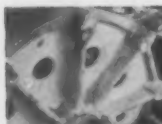
### BUCKET SIDES AND BOTTOMS

Note the crossed stringer beads forming checkerboard patterns. Areas between beads tend to fill and pack with the material being worked, preventing direct abrasion against metal bottom or sides beneath. Checkerboard patterns are particularly adapted to looser types of formations.



### TRACK ROLLERS

A single pass of Stody Self-Hardening around convex surface of worn track rollers generally restores original size, keeps shovel weight on rollers rather than permitting it to be gradually lowered on driving and idler tumblers. Grinding of rollers after hard-facing is unnecessary.



### TRACK TUMBLERS AND IDLERS

If wear is not abnormal, bring lugs to size with Self-Hardening alone. Sufficient accuracy can be attained in size by comparing to unworn sections. Rebuild flat spots on idlers, then hard-face with a single layer of Stody Self-Hardening.



### TRACK PADS

Hard-face leading and trailing edges and inner surfaces of pad lugs with Stody Self-Hardening, as well as the concave section on which rollers travel. When reassembling, insert new, rebuilt or oversize pins to take up any lengthening of track due to pin wear. This insures accurate mesh between tumbler and pad lugs, and lowers wear.

**STODY SELF-HARDENING**, today's number one weapon against wear, is specially suited for hard-facing wearing parts on many types of heavy equipment. Why? Because it forms an excellent bond with manganese steels, provides at least double the wear resistance, yet resists chipping under heavy impact. You'll save your equipment, eliminate down-time and keep things rolling longer by specifying Stody Self-Hardening for hard-facing wearing shovel parts. More information on earth-working equipment applications is contained in "Stody Specification Sheets." These describe heavy equipment applications in detail and furnish invaluable information regarding method of application, additional life of hard-faced part and illustrate appearance of correctly applied hard surfacing. Ask for your free copy.

\*Stody Self-Hardening is one of 12 Stody hard-facing metals especially alloyed to combat abrasive wear with its many variable combinations of heat, impact and corrosion. A booklet covering all Stody alloys with a non-technical discourse on their individual properties will be mailed free.

**STODY COMPANY**  
1129 WEST SLAUSON AVENUE, WHITTIER, CALIFORNIA

# STODY HARD-FACING ALLOYS

## *Retard wear... Save Repair*



# No More Priorities

## ON ST. REGIS VALVE-BAG PACKING MACHINES

*They offer  
maximum  
industrial packing  
efficiency and  
economy*

OK



Here's great news to start off 1945!

The government has consistently recognized the efficiency and economy of the St. Regis Valve-bag Packing System. And now, all priority controls have been removed from St. Regis bag-filling equipment.

These machines, plus St. Regis Valve Bags comprise a packaging system which reduces packaging costs while providing greater product protection. Here's why:

The St. Regis Valve Bag is made of tough kraft paper ... 2 to 6 plies in thickness. It is securely fastened at both top and bottom and has a specially designed filling valve in one corner. When the bag is filled, the internal pressure of the contents automatically closes this valve. (See illustrations at right.)

St. Regis Valve-packing Machines accurately pre-weigh the product and pack it into the bags. This modern packaging system is saving time and the cost of extra labor and equipment for many manufacturers.

Our Machine and Engineering Division is ready to extend the use of the St. Regis Valve-pack System in the fields of construction materials, chemicals, agriculture, and food products. Write for full information today.

FACTORY-CLOSED AT TOP AND BOTTOM



1. Before Filling: Showing the corner valve of a Multiwall bag in the open position ready for machine filling.



2. After Filling: The internal pressure of the contents has automatically closed the valve and the filled bag is all ready for shipping.



# MULTIWALL

MULTIPLY PROTECTION • MULTIPLY SALEABILITY  
**ST. REGIS PAPER COMPANY**

TACANT CORPORATION

NEW YORK 17: 230 Park Ave.

CHICAGO 1: 230 No. Michigan Ave.

BALTIMORE 2: 2601 O'Sullivan Bldg. SAN FRANCISCO 4: 1 Montgomery St.

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Dallas, Tex.

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No. Kansas City, Mo.

Los Angeles, Calif.

New Orleans, La.

Franklin, Va.

Seattle, Wash.

Nazareth, Pa.

Toledo, Ohio



**RUST**—a nuisance and a very costly menace in many places no longer need be tolerated. Laboratory magic has furnished its master.

New Sinclair products, developed to solve tremendous military rust problems, are now available for your problem.

Sinclair **RUST-O-LENE B** for exposed metal surfaces of machinery in operation, in storage, or in transit

- provides a firmly-adhering rust proofing film
- prevents rusting of clean surfaces
- halts further rusting of corroded surfaces
- has lubricating qualities
- defies any degree of moisture from mere dampness to heavy rain
- can be readily removed when desired

Sinclair **OPALINE RP** (Rust Preventing) OILS for enclosed oil systems, prevent internal rusting of engines, hydraulic systems, gear reducers, and similar machinery intermittently operated, stored, or transported. **OPALINE RP** also has ample lubricating qualities for temporary use.

Both these remarkable Sinclair rust-preventives have successfully passed the most exacting service tests, and fully meet Government specifications.

Learn how **RUST-O-LENE B** and **OPALINE RP** can combat rust for you. Write for brochure giving full details.

## SINCLAIR LUBRICANTS-FUELS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

# Rely on JEFFREY EQUIPMENT

for

## UNINTERRUPTED PRODUCTION



This large marble quarry uses Jeffrey machinery extensively. Some applications are shown in the two views at the left



Conveyer with Chutes discharging into a heavy duty Jeffrey Elevator



Jeffrey Enclosed Elevators (three) and Spiral Conveyors (six)

Keeping production moving without a break is of vital importance if highest plant efficiency is to be maintained. Jeffrey maintenance items such as belt idlers, chains, elevator buckets, spiral conveyor flights and transmission machinery are safe insurance against costly breakdowns.

Other Jeffrey Equipment for the Rock Products Industry includes Crushers and Pulverizers, Vibrating Screens, Feeders, Weigh Feeders, Apron, Pan and Drag Chain Conveyors, Sand Settling Tanks, Bin Valves, Car Pullers, Portable Loaders, Unloaders and Stackers—a complete handling service from raw material to finished product. For large productivity and low maintenance costs . . . specify Jeffrey.

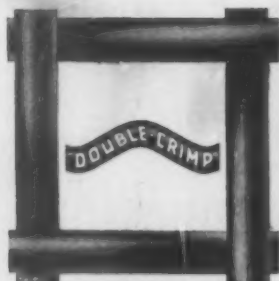


THE *Jeffrey*

MANUFACTURING CO.

935-937 N. 4th St., Columbus 16, Ohio

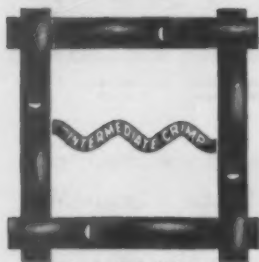
SALES OFFICES:   
 Baltimore   
 Birmingham   
 Boston   
 Chicago   
 Cleveland   
 Cincinnati   
 Dallas   
 Denver   
 Detroit   
 Houston   
 Indianapolis   
 Kansas City   
 Louisville   
 Milwaukee   
 Minneapolis   
 New York   
 Philadelphia   
 Pittsburgh   
 St. Louis   
 Salt Lake City



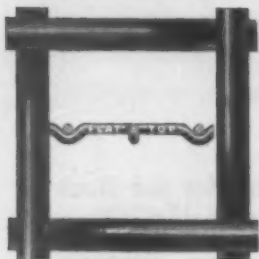
Double-Crimp



Arch-Crimp



Intermediate-Crimp



Flat-Top

#### "Perfect" WEAVES

ARCH-CRIMP  
Coiled  
DOUBLE-CRIMP  
Double-Fill  
DUTCH  
FLAT-TOP  
Twisted-Fill  
INTERMEDIATE-  
CRIMP

REK-TANG  
Selvage-Edge  
STRAIGHT-WARP  
Stranded  
STA-TRU  
Triple-Warp  
Twisted  
Twisted-Warp

# "The Perfect"

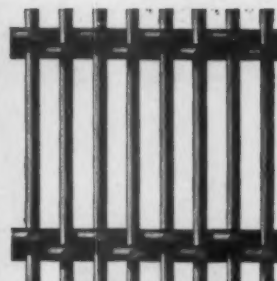
## Wire Cloths and Screens

OF  
SUPER-LOY  
STEEL

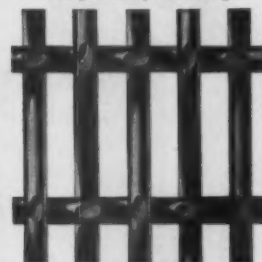
GALVANIZED STEEL  
STAINLESS STEEL  
NICKEL-CHROME STEEL  
PHOSPHOR BRONZE

BRASS  
COPPER  
MONEL  
NICKEL  
ALUMINUM

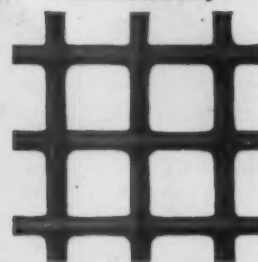
ANY SPECIAL METAL FOR  
ANY SERVICE



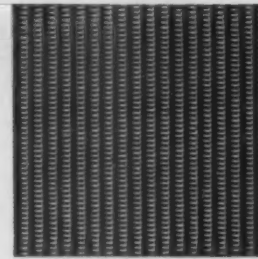
Straight Warp Rek-Tang



Calendered Rek-Tang



Galvanized



Dutch Weave

#### "Perfect" PROCESSING

Arc-Welding  
Bending  
Binding  
Brazing  
CALENDERING  
Colling  
Crimping

Cutting  
Dipping  
Dishing  
Finishing  
Flanging  
Flattening  
Forming  
Framing

GALVANIZING  
Jointing  
Knuckling  
Painting  
Rolling  
Selvaging  
Shaping

Shearing  
Slitting  
Soldering  
Spot-Welding  
Squaring  
Stitching  
Tack Welding  
Trimming

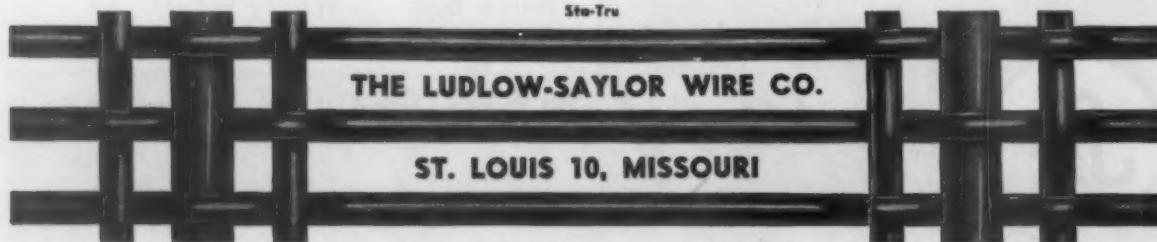
#### "Perfect" PRODUCTS

Baskets  
Circles  
Coils  
Cones  
Cylinders  
Discs  
Forms  
Leaves  
Lengths

Panels  
Pieces  
Ribbons  
Rings  
Rolls  
Sections  
Segments  
Strips  
Templates

Illustrations show items listed in capital letters. Other wire cloths and screens will be illustrated in subsequent advertisements of this series.

Sta-Tru



THE LUDLOW-SAYLOR WIRE CO.

ST. LOUIS 10, MISSOURI



# modernize

for **POST-WAR PROFITS**  
with **AUSTIN-WESTERN**  
**CRUSHERS**

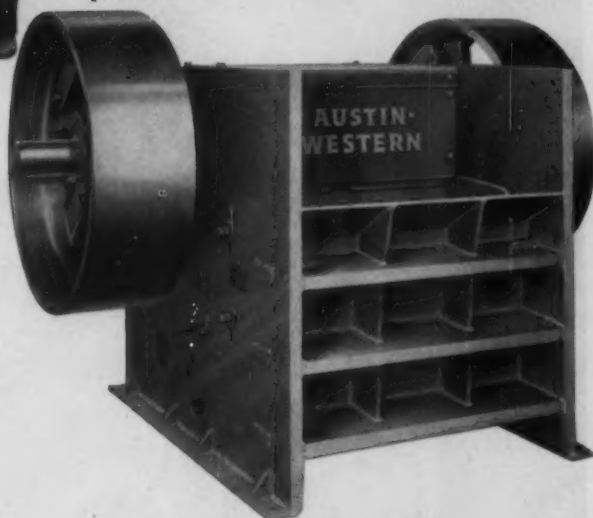


## PRIMARY BREAKER

The 2540 Primary Breaker, illustrated at the left, with its welded steel plate main frame, oversize shaft and SKF self-aligning roller bearings, and extra deep jaws, is engineered throughout in the full realization that the crusher is the heart of any Plant . . . the one Unit that has to withstand the roughest treatment and that controls your profit as well as the amount and kind of aggregate you produce.

## GENERAL PURPOSE CRUSHERS

These crushers range in jaw opening from 1020 to 2036, and can be used for either rock or gravel. Much more than is commonly realized, the capacity of any crusher depends upon its operating speed, jaw depth, crushing angle formed by the jaws, and length of stroke of the movable jaw. Austin-Western crushers are unexcelled in these vital respects.



## ROLL CRUSHERS

Austin-Western Roll Crushers have many unusual and worthwhile features of design, including: SKF roller bearings, located inside the rolls; manganese steel shells; roller chain drive for the rolls, and countershaft for direct motor drive.

The Austin-Western line includes various styles and sizes of elevators, conveyors, screens and bins; all of which can be combined with crushers to produce practically any desired size and style of stationary, semi-portable or portable Crushing and Screening Plant.



**Austin Western**

AURORA, ILLINOIS, U. S. A.

**BUY MORE  
WAR BONDS**

IN YOUR POST WAR PLANT

MODERN ENGINEERING WILL COUNT:

COUNT ON THE BUTLER ENGINEER!

*The* **BUTLER BIN** *Company*  
WAUKESHA, WISCONSIN

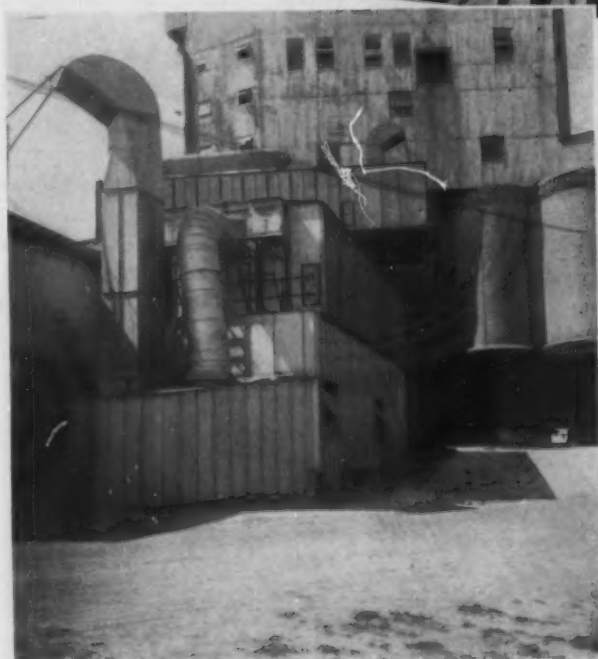
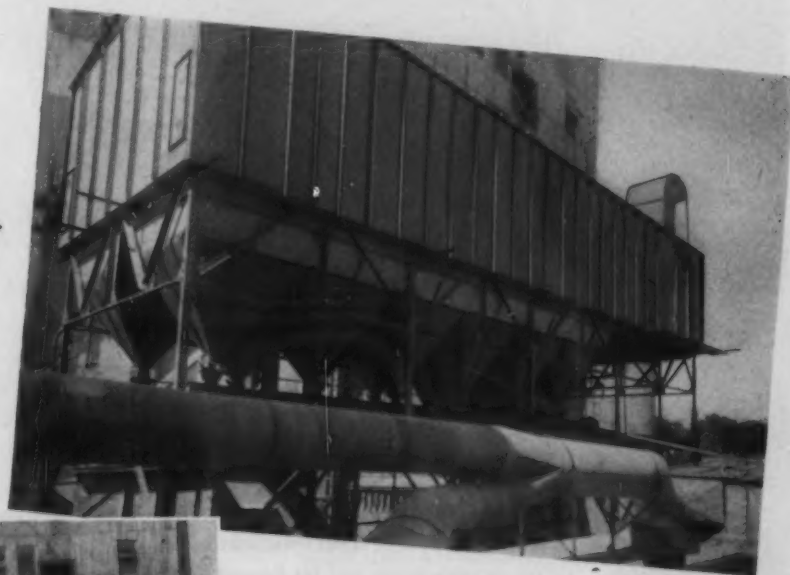
# PARSONS DUST COLLECTORS

*are recognized standard equipment in*

**CEMENT · INDUSTRIAL SAND · CRUSHED STONE · LIME  
AND GYPSUM · PLANTS**

A 39,000 C.F.M. Parsons Oval Bag Dust Arrestor for collecting dust from screen house—Wedron Silica Company.

Parsons Oval Bag Dust Arrestor collecting dust from Wedron Silica Company's mill building handling 23,000 cu. ft. of air per minute.



**P**UT Your Dust Problem in Competent Hands . . .

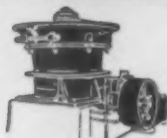
PARSONS will not only give you facts and figures, but experience—years of it. Results, backed up with repeat installations, are testimony of our work. A clean, dust-free plant means greater production, not to mention the salvage value of fine dust as a filler. Send us your inquiry and watch the technique, skill and manner with which we proceed. Each dust problem is handled individually, with equipment specified on the requirements involved.

## PARSONS ENGINEERING CORPORATION

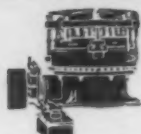
2549 E. 79 ST., CLEVELAND 4, OHIO



Where will  
**YOUR** plant  
fit in the  
postwar  
picture?



PRIMARY BREAKERS



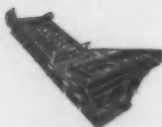
GYRASPHERE SECONDARY CRUSHERS



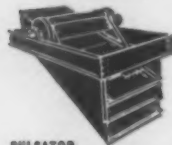
BELT AND  
BUCKET ELEVATORS



JAW CRUSHERS



SAND CLASSIFIERS



PULSATOR  
VIBRATING SCREENS



HEAVY DUTY FEEDERS

As an aggregate producer, you are facing the postwar prospect of rigid specifications, finer sizing requirements and far keener competition than ever before.

Is your plant and its equipment adequate to serve postwar construction market demands—at a profit?

Start your modernization plans now. Get ready for quick reconversion. Build in new plant efficiency with Tel-smith Equipment.

By replacing worn out, obsolete or inadequate units with the right Tel-smith machinery you can eliminate roundabout methods of

handling and bottle-necks in the flow of materials. Tel-smith's greater flexibility insures wider product diversification. Tel-smith's speedier, smoother, trouble-free operation and greater capacity will step up your production. And Tel-smith's lower power and up-keep requirements will cut down your costs.

Tel-smith expert engineering help is at your disposal, whether you plan to expand, modernize or build a complete new sand and gravel or rock crushing plant. Consultation involves no obligation. Get Bulletin E-11.

# TELSMITH

*Equipment*

FOR SAND, GRAVEL, ROCK CRUSHING PLANTS

SMITH ENGINEERING WORKS, 508 EAST CAPITOL DRIVE, MILWAUKEE 12, WISCONSIN

Cable Addresses: Sengworks, Milwaukee—Concrete, London

51 East 42nd St.  
New York 17, N.Y.

211 W. Wacker Drive  
Chicago 6, Ill.

713 Commercial Trust Bldg.  
Philadelphia 2, Pa.

247 Third Street  
Cambridge 42, Mass.

Boeck Eqt. Co.  
Milwaukee 3, Wis.

Mines Eng. & Eqt. Co.  
San Francisco 4—Los Angeles 14

Brandels M. & S. Co.  
Louisville 8, Ky.

Rish Equipment Co.  
Charleston 22, & Clarkburg, W. Va.

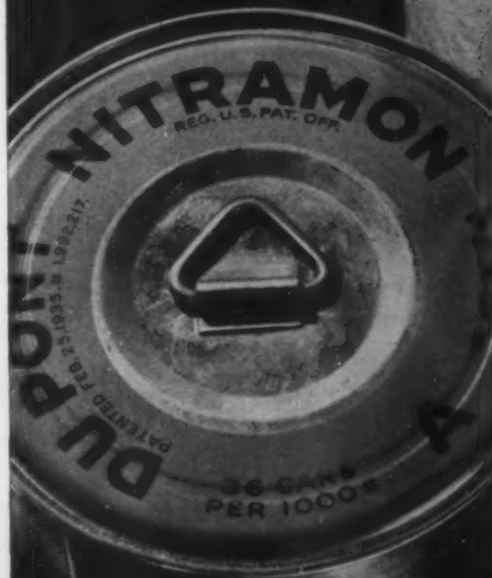
Rish Equipment Co.  
Roanoke 7, & Richmond 10, Va.

North Carolin Eqt. Co.  
Raleigh and Charlotte 1, N.C.

Wilson-Wezner-Wilkinson Co.  
Knoxville 8, & Nashville 6, Tenn.



# This blasting agent makes quarry work **SAFER**



"Nitramon" is detonated by a combination of "Nitramon" Primer and Primacord.

With so many new hands on the job today, the safety features of "Nitramon" are more valuable than ever.

"Nitramon" is so totally different it's known as a blasting agent rather than an explosive. Unlike conventional explosives, "Nitramon" cannot be detonated by the strongest commercial blasting caps, Primacord, flame, friction, falling objects . . . or even the impact of high velocity rifle bullets!

"Nitramon" is designed to meet a variety of needs for quarry blasting using either well drill or coyote tunnel methods. Some types are suitable for breaking extremely hard rock . . . others are particularly adapted to easy-shooting material. "Nitramon" is readily loaded and produces no headaches. It is packed in water-tight metallic containers.

"Nitramon" is an economical blasting agent that makes quarry work safer . . . helps maintain schedules . . . and increases operating efficiency. Check with any Du Pont Explosives representative for complete information. E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

## DU PONT "NITRAMON"

The Safest Blasting Agent



*Lay-Set is pre-broken-in*

● When you put Hazard LAY-SET PREFORMED on your machine, you install a wire rope that is ready to start work. You don't have to "baby" it. The preforming process sets each wire and strand at complete ease and relaxes the steel. That's why LAY-SET can work hard from the word GO! More than this, LAY-SET PREFORMED is easier and faster to install and safer to handle. It lasts longer, therefore gives greater dollar-value.



**HAZARD WIRE ROPE DIVISION**

WILKES-BARRE, PA.

ATLANTA

CHICAGO

DENVER

FORT WORTH

LOS ANGELES

NEW YORK

PHILADELPHIA

PITTSBURGH

PORTLAND

SAN FRANCISCO

TACOMA

**AMERICAN CHAIN & CABLE  
BRIDGEPORT**

**HAZARD LAY-SET** *Preformed* **WIRE ROPE**

## PREPAREDNESS FOR PRESERVATION

**C**ONSTRUCTION projects totalling something like 15 billion dollars already have been proposed for post-war consideration and a third of these projects (in dollars) are designed or in the planning stage. What the ceiling will be by V-E day, nobody knows. Some of the projects now on the boards may not materialize for lack of finances, credit or approval, but the accumulated total *has* to be tremendous.

To us, it seems far more important than enumerating projects at this stage that the rock products industry anticipate a post-war demand for its products which may well equal or exceed the 1925-1929 tonnages. The industry poses no reconversion problems but it must be prepared to absorb manpower and accomplish long deferred plant installations.

Preparations for servicing post-war construction should be intelligently planned to prevent or minimize an over-expansion of productive capacity that would remain after deferred construction is satiated. Unless the industry is willing and ready to meet whatever demands may be imposed on it when the time comes, it may find that outside interests have entered the field to a serious extent. The much publicized construction program-to-be might attract outsiders even though they lack experience.

All the separate rock products industries have the capacity to fulfill the national demands to come, assuming that peak years of post-war construction will not materially exceed 1925-1929 levels, which is unlikely, but there will be sections of the country where extraordinarily heavy peaks may develop.

If history repeats itself, there will be a four- or five-year period of construction recovery, based on the accumulation of deferred demands. Further expansion thereafter will depend upon general economic expansion, as it did in the late '20s, and how well construction costs are held in line with relation to price levels and living costs.

Actual plant modernization or expansion of any magnitude must wait, of course, but an appraisal of potential demands for their products might well be made and kept up-to-date by producers in their own market areas. It would appear to be good business to keep engineers, contractors and government agencies posted on tonnages of materials they may have available from locally established plants.

Potential production for existing operations should be analyzed in preparing for modernization and rehabilitation, and expansion involving the opening of new deposits or quarries and construction of new plants should only be undertaken if prospective long term construction levels warrant. Over-expansion by existing producers, while undesirable, would not be as detrimental to future operations of a business as

would an over-capacity resulting from new operating interests that should never have started.

Project plants will have their legitimate place in connection with big engineering projects such as the Missouri River Basin Development (M.V.A.) soon up for consideration by Congress. But, even on projects of that magnitude, experienced operators of permanent plants have proven their exceptional ability to get the job done. Portable plant operation likely will be justified, particularly in connection with road-building, and permanent plant operators may well swallow their prejudices and consider expansion in that direction if their normal permanent area of operations is unproductive of sufficient volume. But, road-side competition as such, with "get by" materials, should be discouraged and can be minimized by preparedness on the part of established producers.

Time is already growing short and the industry should not risk being caught unprepared. After V-E day, some 2,000,000 men will become available within a 12-month period, alleviating one serious obstacle to plant operation. Some manufacturers of machinery are now taking preference orders for future delivery under plans that might well be investigated. And, in the interim, it will be well to keep in close touch with priorities and machinery allocations. We know that many a producer has been denied machinery on his first attempt and that a persistent follow-up resulted in the release of the machinery in question.

There will be intense competition for construction materials should demand exceed supply in any area but, for the long pull, it will be desirable, in order to sustain a high level of construction activity, that construction costs be held within reasonable bounds.

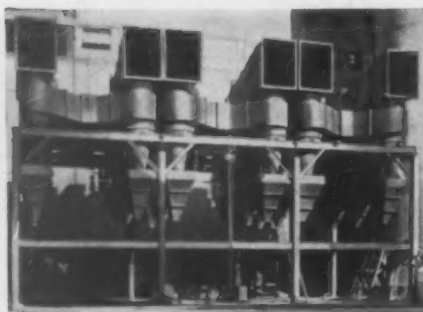
But, we do anticipate that there will be a return to requiring rigid adherence to specifications and standards. The bars were let down and much low grade material was accepted on many projects during the war construction period and with some sad performance experiences. With the return of many engineers now off to war it is doubtful if some of these flagrant practices will be condoned as they were in the interests of speed.

Labor will continue to exert pressure for wage increases to compensate for loss of overtime and the disappearance of high paying war jobs, and labor costs per unit of production can be held down only by increased productive use of all resources, manpower, equipment and raw materials, in post-war operations.

*Bror Nordberg*

# ..."no wear, nothing spent for maintenance"

SAYS DEWEY PORTLAND CEMENT COMPANY... ABOUT BUELL (van Tongeren) DUST COLLECTORS



Buell (van Tongeren) Dust Recovery System  
in plant of Dewey Portland Cement Company

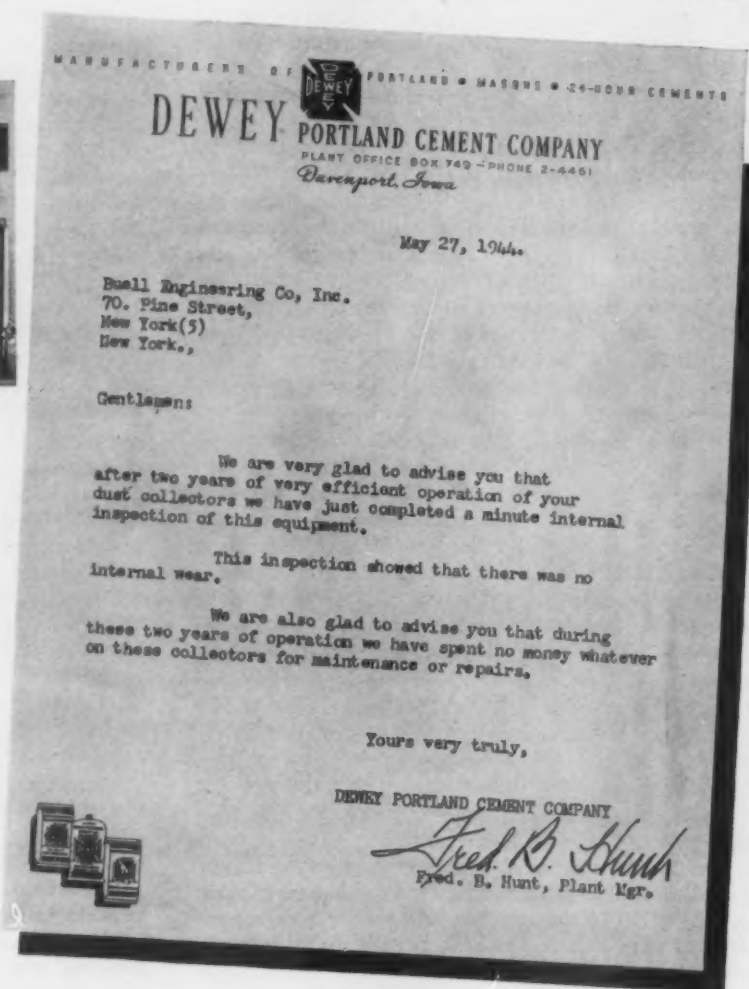
## YOUR POSTWAR DUST COLLECTION PROBLEM

• THE EXPERIENCE of the Dewey Portland Cement Company so appropriately put in their open letter on this page has been the invariable experience of the rock products industry with Buell (van Tongeren) Dust Recovery Systems, wherever used.

Today, however, most plants are handicapped by the



BUELL ENGINEERING COMPANY, INC.  
2 Cedar St., Suite 5000, New York 5, N. Y.  
Sales Representatives in Principal Cities



lack of dust collection and other badly needed equipment of all kinds due to the absence of priorities.

With a full understanding of this condition and the hardships it presents, Buell suggests that plants in the rock products industry submit their dust collection problems to Buell's engineering staff now, while there is ample time for careful planning. And thereby assure to these plants the early installation of dust collection equipment when materials are again released for civilian construction work.

Rock products operating men and engineers are invited to write for a copy of the factual illustrated book—"The Buell (van Tongeren) System of Industrial Dust Recovery."

DESIGNED TO DO A JOB, NOT JUST TO MEET A "SPEC"



It may be possible to remove all present War Production Board controls over the manufacture and distribution of construction machinery after the end of the war in Europe, and to provide only that up to 75 per cent of the production of critical items and critical repair parts to be reserved for the military if they require it, according to recent WPB calculations.

At present, the military is taking about 75 percent of the over-all production, with 100 percent of the production of some items. Between 90 and 100 percent of all new cranes and shovels are now going to the military, 75 percent of the motor graders and 85 percent of the track-laying tractors. The construction machinery industry has reported difficulty in providing repair parts, especially those requiring castings and forgings. Engine parts for used construction machinery and equipment are particularly critical at this time.

## Construction Machinery Shipments

War Production Board reports that more than twice as many angle-dozers and bulldozers and twice as many tractor-mounted cranes and shovels were shipped in the third quarter this year as in the corresponding quarter of 1943.

Shipments for these and other items of construction machinery in the third quarter, as compared with the third quarter, 1943, included: Graders, 1,319 and 1,458; angledozers and bulldozers, 8,406 and 4,120; cranes and shovels, power, 2,520 and 1,928; contractors' pumps, 13,773 and 8,415 and cranes and shovels, tractor mounted, 2,576 and 1,115.

## Portland Cement Clinker

Amendment 86, Rev. SR 1 to GMPR has been announced by Chester Bowles, Administrator, effective November 30, 1944, to Section 2.10 (g) to read as follows:

(g) Portland cement clinker.

## Wet Ground Mica

Manufacturers of wet ground mica (used in making paint, wall paper and rubber) may sell on an adjustable pricing basis pending final decision by OPA regarding requests for price increases by some producers.

Present producers' ceilings for such mica are March, 1942, prices for each producer, plus \$5 a ton. OPA is now engaged in making a study of the situation to determine whether the

present ceilings are generally fair and equitable, and whether an industry-wide increase in prices is warranted at this time. Order No. 8 under MPR No. 348 is effective immediately.

## Minimum Wages

According to a procedural revision of WLB General Order No. 30, voluntary wage and salary increases which do not bring rates above 50c an hour, heretofore approved by the National War Labor Board to correct substandards of living whenever application was made for such approval, may now be put into effect by employers without the necessity of obtaining approval. In the past such adjustments could be made without approval only up to 40c an hour.

## Fertilizers

Office of Price Administration has authorized increased prices for fertilizers, effective November 23. As these prices involve raw materials produced by the rock products industries, the new complex set-up of prices is referred to but it is too voluminous for publication in detail. Amendment concerns Part 1367, 2d Rev. MPR 135, F. R. Doc. 44-17865. The amendment involves maximum prices of mixed fertilizer, superphosphate, potash and nitrogenous fertilizer materials other than Victory garden and specialty fertilizers. For sales of the above products to dealers in any area, the maximum price shall be the consumer price for the area as provided in Appendix A less the margin most commonly established by the seller between consumer prices and dealer prices during March, 1942, expressed either as a percentage of the consumer price or as a dollar-and-cent margin, or both, depending upon how such margin was calculated in March of 1942. A seller who had established no margin by sales during March of 1942 shall allow for sales to dealers the margin below maximum prices to consumers established by his most closely competitive seller. If the product was not generally sold during March of 1942, the margin shall be the same as that established for the most nearly comparable product which was sold during March of 1942. The foregoing basic pricing policy is similar to that governing other rock products but it is more complex in its application as it involves bag differentials, premium brands, special ingredients, farm de-

liveries, and many regional price set-ups.

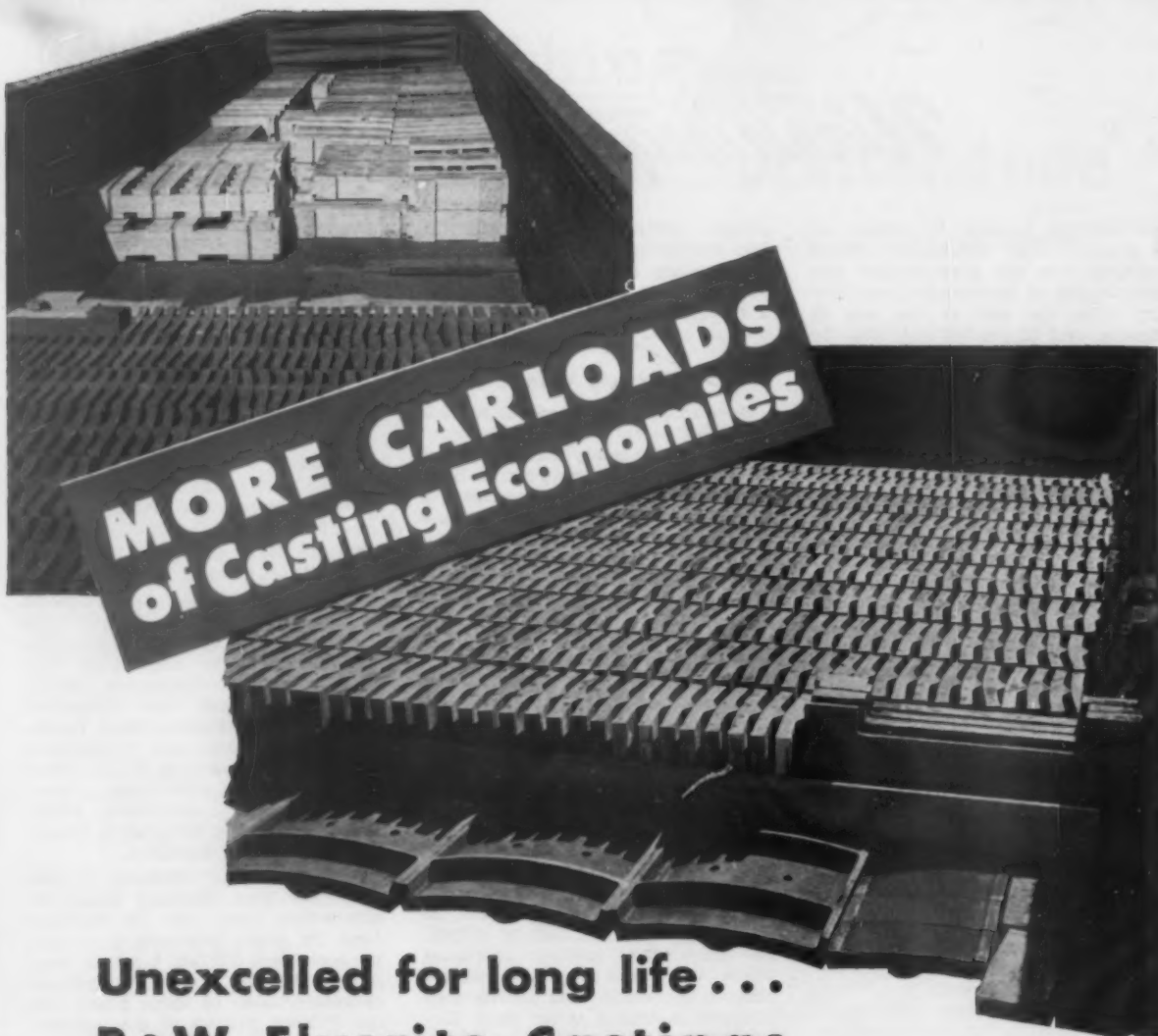
## Curtail Magnesium Production

Production of magnesium metal will cease in nearly all government-owned plants by January 1, according to a recent War Production Board announcement. This is of interest as dolomite rock is involved in magnesium production at a number of plants. The most recent closing down orders involve the Dow Magnesium Co. plant at Velasco, Texas, and Electrometallurgical Co., Spokane, Wash. Partial curtailment at the Diamond Magnesium Co. plant at Painesville, Ohio, also has been ordered. Other previous closings are as follows: Dow Magnesium Co., Marysville and Ludington, Mich.; Amco Magnesium Co., Wingdale, New York; Mathieson Alkali Works, Inc., Lake Charles, La.; Permanente Metals Corp., Manteca, Calif.; Basic Magnesium, Inc., Las Vegas, Nev.; Ford Motor Co., Dearborn, Mich.; and International Minerals & Chemicals Corp., Austin, Texas.

It is worthy of comment to note that the New England Lime Co. magnesium plant, and the National Lead Co. plant have both continued in operation. While location may have a bearing on their continued operation, both of these plants use the Pidgeon process of manufacturing magnesium metal from dolomite rock. This process, described in ROCK PRODUCTS, is said to involve lower costs than the others.

## Higher Cost War Housing

NATIONAL HOUSING AGENCY is encouraging the construction of larger and better quality housing through the establishment of higher sales and rental ceilings. Top sales prices of \$8,000 and shelter rental ceilings of \$65 will be established in selected high cost areas, with lower ceilings in other areas where such lower levels will allow construction of the quality and size necessary to attain objectives of the program. The housing will be authorized under what is known as the H-2 program, and all occupancy restrictions will be removed on such housing. Construction authorizations will be subject to local quotas to be determined by N.H.A., and these local quotas will set maximum sales and rental prices. This new program undoubtedly will open up a larger market for aggregates, cement and concrete products.



## Unexcelled for long life . . . B&W Elverite Castings

**ELVERITE A**—A chilled iron product made from cold-blast charcoal iron. The mixtures are varied to obtain a chilled section of  $\frac{1}{8}$  to  $2\frac{1}{2}$  inches in depth, depending upon the shape and use of the casting. Elverite A is made with a machinable gray iron back which gives the castings strength and resistance to shock. The chilled sections have a hardness of 500-550 Brinell.

**ELVERITE C**—An alloyed, heat-treated, chilled iron product made from a base mixture of charcoal iron. The sections back of the chilled areas are of such hardness that they must be finished by grinding. The chilled sections have a hardness of 675-725 Brinell.

For economical operation, specify Elverite.

# BABCOCK & WILCOX

The Babcock & Wilcox Co.

85 Liberty Street • New York 6, N. Y.

C-61

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# Rocky's NOTES

## An Editorial Excursion

**A**S THIS is written the writer has just returned from a two-week's trip to the central Southwest—north-east Texas and Oklahoma. The primary purpose was to make a brief address to the Oklahoma Mineral Industries Conference at Oklahoma City, December 5. However, the trip included Dallas and Fort Worth, Tex., Ada, Okla., and various places in between.

It is obvious that construction in this part of the country is slowing up. Most of the major federal government projects, of which there were many, particularly air fields, are completed, and only a resumption of highway construction is looked for to bring back a normal business to producers of construction materials.

There is an active demand for railway ballast, and for aggregates for repaving certain airports. The latter case is particularly interesting because the airport repaving is necessitated, as in certain instances on the Pacific Coast, in order to provide landing places for B-29's and their equivalent in other types of super-fortresses. In northeast Texas plans called for 18 in. of concrete on a 12-in. granular base. The concrete will use 4-in. top size aggregate. Since gravel is scarce in this section of the country, the 4- to 2-in. sizes will be crushed stone and the 2-in. down, sand and gravel. This means that crushed stone and gravel producers are in active coöperation on a single job, and harmony prevails.

If this job is typical of airport construction in the years to come, when we shall have 50- or 60- passenger planes, it augurs well for future business of all aggregate producers and Portland cement manufacturers. Also, producers in both Texas and Oklahoma anticipate large highway paving programs in the post-war years. Gravel deposits are nearly all in the present or ancient flood plains of the river valleys, and are shallow pockets, so that gravel plants are rather simple affairs designed for relatively short lives or to be moved to new locations as local deposits are worked out. Much of the river bottom land around Dallas has been protected by levees and is no longer replenished

by annual floods, as in past years. The gravel and sand are still brought down by river floods but evidently are deposited in the channels between levees, and up to the present time, at least, these channels have not been dredged, as probably they will be in the future. This may be the ultimate source of sand and gravel anywhere near some Texas cities.

At Ada, Okla., we learned that M. O. Matthews, vice-president and general manager of the Oklahoma Portland Cement Co., had been seriously ill since the middle of October, but is able to be around again for short periods. The plant, like many others in the industry, has suffered from lack of adequate maintenance, because of lack of labor and other war conditions. However, a new air-quencher cooler was recently installed. The dry ice plant is operating to capacity and we saw a specially designed railway car being loaded for shipment to Oklahoma City. The plant also fills cylinders of liquid CO<sub>2</sub> for Oklahoma City consumers.

### Mineral Industries Conference

Of course, the principal mineral industry of Oklahoma is oil. There is plenty of evidence of it in Oklahoma City itself, where the eastern part of the city is literally peppered with oil derricks. The average Easterner probably has the impression that a hole punched almost anywhere in the state will flow oil, but of course that is far from the fact. However, we were not prepared for the rather pessimistic view presented by petroleum producers that Oklahoma as an oil-producing state is probably on the decline. Petroleum has been responsible for so much of the state's mineral wealth, that forward-looking business men are eager to develop some of the state's other

mineral resources. There is plenty of coal in the eastern part of Oklahoma, but there are at present few markets for it.

The fastest growing mineral industry in Oklahoma, at the moment, is agricultural limestone; and judging by the character of the farm lands we passed through, there probably are few sections of the country which need limestone and phosphate more than eastern and central Oklahoma. Consumption of agricultural limestone has increased in a very few years from a few thousand tons annually to a few hundred thousand, but millions of tons are required. Other than gas and oil, the chief industry of the state is still agriculture, and years of cattle raising and cotton growing have depleted the soil to an alarming degree.

There is plenty of limestone in the eastern part of the state, but phosphates may have to be brought in from a distance, although there are rocks containing phosphoric acid in the form of apatite in some localities. Most interesting is a large deposit of a very pure dolomite in the southern part of the state, which the State Geological Survey believes offers great possibilities. As yet no one has quarried it. Oklahoma still is a stock-raising section, but will not continue to be so for long if drastic steps are not taken to replenish the soil minerals. Incidentally, the State Geological Survey has recently published a large map showing the mineral deposits and mineral industries of the state, which can be had for the asking.

The soil of this area, coming from the disintegration of some of the oldest bed rocks in the United States, originally was rich in soil minerals, but uncontrolled floods, constant shipment of live stock and constant cotton cropping have greatly diminished these soil mineral resources. Prize, blooded Hereford cattle are still raised, especially in the limestone section around Ada, but the rest of the state obviously needs a major operation to restore fertility to its soils.

Even the prize cattle raised around Ada appear to have something lacking, for one rancher there is undergoing much kidding from his friends because a Hereford bull, for which he is reported to have received \$38,000, failed to deliver the goods and had to be sent North to get some vitamins (and maybe minerals, too) added to his diet, so that he would earn his purchase price.

*Nathan C. Rockwood*





## Record-Breaking Bore

**L**ONGEST TUNNEL ever driven from only two headings, is the recently completed Alva B. Adams bore in Colorado. This mighty project will take water that would normally flow to the Pacific and bring it down on the Atlantic side of the Rockies to irrigate some 650,000 acres of farmland. We are proud to have been associated with this history-making achievement through the preference for Texaco lubricants shown by the builders.

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★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.



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FOR ALL AIR COMPRESSORS AND TOOLS

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON SUNDAY NIGHTS ★ METROPOLITAN OPERA BROADCASTS SATURDAY AFTERNOONS



### Leaves Lime Association

W. VERNON BRUMBAUGH has resigned as secretary of the National Lime Association to take a position



W. Vernon Brumbaugh

in the trade association field. He will be employed by McClure, Hadden & Ortman, Inc., management engineers, Chicago, Ill., to be the Washington representative of the National Plywood Distributors Association, Venetian Blind Association of America, Non-Ferrous Founders' Society, Waxed Paper Institute, Inc., American Ladder Institute, and American Washer and Ironer Manufacturers Association. His future address will be 914 National Press Building, Washington 4, D. C.

### Now a Colonel

LIEUTENANT-COLONEL GEORGE EATON NELSON, district sales manager of the Kosmos Portland Cement Co., Inc., Cincinnati, Ohio, has been promoted to Colonel. He has been on active duty since 1940 and now is stationed at Wilmington, Del.

### National Gypsum Changes

MAURICE C. CROOK, superintendent of the Fort Dodge, Iowa, plant of the National Gypsum Co., Buffalo, N. Y., has been appointed assistant chief engineer, with headquarters in Buffalo. Mr. Crook has been with the company since 1938 when the Medicine Lodge, Kan., plant was purchased by the National Gypsum Co. At that time Mr. Crook was assistant superintendent of the plant. Three years later he was sent to Bellefonte to aid in the supervision of the construction work on the plant there.

In April, 1942, he was promoted to superintendent at Medicine Lodge and a year later was transferred to the Fort Dodge plant in the same capacity.

H. J. MARSHALL, superintendent of the Akron, N. Y., plant, has been transferred to the Fort Dodge plant as superintendent. In 1938, three years after National Gypsum Company assumed ownership of the Akron plant, Mr. Marshall was promoted to superintendent and continued in this office until his recent transfer. Mr. Marshall started on his career with gypsum when he went to work for the Phoenix Gypsum Co. Later he worked at Akron for the Universal Gypsum Co. as mill and construction superintendent, a position he held from 1922 to 1938 when he was named superintendent by National Gypsum Company, the plant's new owners.

### Chemical Engineer

FRED LOHSE, who has served as process development engineer with the Permanente Cement Co., Oakland, Calif., for the past five years, has become chemical engineer for Donald R. Warren Co., engineers of chemical and process plant design, San Francisco and Los Angeles. Mr. Lohse also served as research and design engineer for the Permanente Metals Co., project engineer with the Moss Landing Magnesia Plant, and assistant manager of the development and engineering division of the Henry J. Kaiser Co.

### Elected Board Member

RALPH H. CAKE, president of the Equitable Savings & Loan Association and head of the law firm of Cake, Jareguy & Tooze, has been elected a member of the board of directors of the Oregon Portland Cement Co., Portland, Ore. He succeeds Arthur H. Devers, who died recently.

### A.S.M.E. Treasurer

KURT W. JAPPE, manager of detonator operations, Hercules Powder Co., Wilmington, Del., has been appointed treasurer of the American Society of Mechanical Engineers, succeeding Dr. William D. Ennis, who has retired after holding office since 1935.

### Goes to South America

W. A. CONLEY has been engaged by the Fabrica de Cemento Samper, Bogota, Colombia, South America, to make a survey of their new limestone deposits, and act as consultant in the organization of their quarry operations.

### Universal Atlas Changes

RICHARD A. DITTMAR, plant manager of the Hudson, N. Y., plant of the Universal Atlas Cement Co., New York, N. Y., has been appointed chief engineer to succeed Sidney J. Robison, who has retired. Mr. Dittmar has been in charge of the Hudson plant since 1924. He has been with the company 31 years, having started at the company's Hannibal, Mo., plant in 1913. Mr. Dittmar is former chairman of the Cement and Quarry section of the National Safety Council.

MR. ROBISON, who has been with the company more than 37 years, started in the engineering office at Buffington in 1907 and became chief engineer in 1937. He was in general charge of the design and construction of the company's new Northampton, Penn., plant, and he supervised the construction of the new Hudson, N. Y., and Leeds, Ala., plants and the modernization of the plant at Independence, Kan.

W. SCOTT WILSON, who has served at the Hudson plant in various departments and as assistant plant manager since 1923, will succeed Mr. Dittmar as plant manager. Mr. Wilson joined the company at the Northampton, Penn., plant in 1914.

RAYMOND L. WALSH, electrical engineer, has been appointed assistant chief engineer by Mr. Dittmar. He



Richard A. Dittmar

joined the company at Chicago in 1925 as assistant electrical engineer.

### Resigns

MUREL SHEPHERD, secretary of the Muskingum River Gravel Co., Zanesville, Ohio, has resigned as city safety director, which position he has held since July of this year.

## Elected Vice-President

HOWARD H. LEH, general manager of the Keystone Portland Cement Co., Philadelphia, Penn., and widely known in the portland cement industry, has been elected vice-president of the company. Mr. Leh has been connected with the cement industry since 1907, as chemical engineer, consulting engineer and general superintendent, during which time he designed and constructed several cement and lime plants. He is also a director of the Limestone Products Corp. of America, Newton, N. J., and a member of Committee C-1 of the American Society for Testing Materials.

## Promoted to Colonel

HENRY CROWN, who resigned as chairman of the board of the Material Service Corp., Chicago, Ill., to enter the Army as Lieutenant-Colonel in the U. S. Engineer Corps., has been promoted to the rank of Colonel. He is now chief of military supply for the Great Lakes division.

## Named P.C.A. Manager

RICHARD P. SCOTT, veteran cement mill engineer, has resigned as assistant to the general operating manager of the Universal Atlas Cement Co. to accept the position of manager of the manufacturing research bureau of the Portland Cement Association. Mr. Scott has had 20 years'

experience in cement engineering. L. A. DAHL, manufacturing research engineer, who has been in charge of the manufacturing research bureau for the past four years, is returning to the Association's research laboratory.

## Gypsum Manager

ORA FOWLER GRIEVE has been appointed manager of gypsum production operations of the Celotex Corp., Chicago, Ill., with headquarters at the Port Clinton, Ohio, plant.

## C. of C. President

FRANK E. McCASLIN, president of the Oregon Portland Cement Co., Portland, Ore., has been elected



Frank E. McCaslin

president of the Portland Chamber of Commerce for 1945. Mr. McCaslin has served for the past two years as first vice-president of the chamber. He was president of the Junior Chamber of Commerce in 1933 and of the Rose Festival Association in 1939.

## In Argentina

A. BERGNER, consulting engineer for cement, lime, crushing and ore dressing, is now located in Buenos Aires, Argentina. He formerly lived in Manila, Philippine Islands, and has been a subscriber to Rock Products since 1931.

## Manages P.C.A. Division

T. C. POWERS, for many years assistant to F. R. McMillan, research director of the Portland Cement Association, Chicago, Ill., has been made manager of the newly established basic research division of the Association. Basic research being done at the Association's Chicago laboratories and by the Portland Cement Association Fellowship at the National Bu-

reau of Standards in Washington, will be combined under the direction of the new division.

## OBITUARIES

MAX A. ALTGELT, former vice-president and member of the board of Servtex Materials Co., New Braunfels, Texas, died December 8. Previous to his appointment as vice-president, Mr. Altgelt held the position of general plant superintendent of the company.

H. P. BENNETT, president of the Bennett Concrete Stone Co., Cleveland, Ohio, and a leading figure in the building supplies field in Cleveland, died December 9. He was 71 years old. Mr. Bennett also was president of the Hugo Sand Co., Kent, Ohio.

CLARK JOSEPH BELL, former owner of the Bell Sand and Gravel Co., Dayton, Ohio, passed away December 6 after a short illness. He was 54 years of age. Mr. Bell was more recently engaged as a building contractor.

CLAUDE L. WAGNER, who retired in 1937 as vice-president of Superior Portland Cement, Inc., Seattle, Wash., because of ill health, died December 1 in Yakima, Wash., where he had resided the past two years. He was 58 years old. Mr. Wagner became associated with the cement firm in 1911. He continued as a director of the company after his retirement.

HENRY H. MITCHELL, vice-president in charge of finance of the General Crushed Stone Co., Easton, Penn., died December 9 at his winter home in Eau Gallie, Fla. He was 85 years old. For 30 years Mr. Mitchell had been an active leader in the community, religious, social and business life of Easton.

WALTER SAVAGE LANDIS, vice-president of the American Cyanamid Co., New York, N. Y., passed away recently at his home in Old Greenwich, Conn. He was 63 years old. Dr. Landis held nearly 60 patents in the chemical and metallurgical fields and had received three of the highest awards bestowed by the chemical industry: the Chemical Industry Medal from the American section of the Society of Chemical Industry, the Perkin Medal, and the Gold Medal of the American Institute of Chemists.

Born at Pottstown, Penn., in 1881, Dr. Landis graduated from Lehigh University in 1902 and remained there until 1912 as instructor, assistant professor, and finally associate professor of mining and metallurgy. In 1912 he became chief tech-

## Call Off Sand and Gravel and Ready Mix Conventions

Executive Secretary V. P. Ahrens of the National Sand and Gravel Association and the National Ready Mixed Concrete Association, announced on January 8 the cancellation of the conventions of the two associations scheduled to meet in New York, January 23 to 26, inclusive. This action has been taken "in deference to the spirit of the Byrnes order" banning conventions after February 1, even though the conventions would have been concluded before this date. However, the Board of Directors of the National Sand and Gravel Association will meet at the Hotel New Yorker on January 22 and 23, and the Board of Directors of the National Ready Mixed Concrete Association will meet at the same place on January 24 and 25. As it has been the custom in the past, active and associate members are invited to attend these board meetings. This announcement was received just before going to press, and the "Conventions Coming" calendar could not be changed.

nologist for the American Cyanamid Co. During the First World War he originated a process for the manufacture of nitrates artificially. At the close of the war he was occupied with the production of cyanide from cyanamid.

FREDERICK H. RICHARDSON, lieutenant-colonel, U. S. Army, retired, and district engineer of the Portland Cement Association in Salt Lake City, Utah, passed away recently at the age of 61. Colonel Richardson was the representative of the Association at Spokane, Wash., for several years before being transferred to Salt Lake City. His professional career included railroad and highway engineering. In the First World War he was a captain of engineers in the army, serving in France in 1918 and 1919. In the present war, as major in the reserve corps of engineers, he was ordered into service in November, 1940, and stationed at Ft. Douglas, Utah; Ft. Dix, New Jersey; the engineers supply school at Columbus, Ohio, and before retirement in 1943, he was commanding officer at the army service forces supply depot at Richmond, Va.

A. F. SWAIN, former superintendent of the grinding department of the Colorado Portland Cement Co., Portland, Colo., died recently in San Diego of injuries suffered two months ago when he was struck by a street car. He was 75 years old. Mr. Swain had been with the cement company for 41 years before his retirement in 1940. Born in Indiana, he came to Colorado in 1899, settling in Florence, where he lived until his death. He had been visiting in San Diego for about a year.

GEORGE VOGEL, manufacturer of concrete block, Milwaukee, Wis., died recently at the age of 48. For years Mr. Vogel, with his brother, Adam, was in the concrete block business. His brother died about a year ago.

J. B. McLEAN, for many years interested in the development of a talc mine in Sedro-Woolley, Wash., passed away recently in Seattle, Wash., after an illness of about four months.

HOWARD GAY, secretary and cost department manager of Macwhyte Co., Kenosha, Wis., and a leader in cost accounting system, died recently after an extended illness. He was 51 years of age.

### Gypsum Post-War Plans

NATIONAL GYPSUM Co., Buffalo, N. Y., has announced that its reserves set up for post-war improvements and expansion have been stepped up from \$4,000,000 to \$7,000,000. President Melvin H. Baker said that the

company will spend about \$3,000,000 for plant improvements and approximately \$4,000,000 for new plants. He did not anticipate any substantial increases in prices.

### Permanente Cuts Cement Prices

CEMENT PRODUCERS in Northern California were tossed into the middle of a price cutting problem with the announcement of Henry J. Kaiser, head of Permanente Cement Co., that effective December 6, the company would reduce the base mill price by 20c per barrel for Northern California and Western Nevada. In making this 12 percent reduction, Mr. Kaiser emphasized his belief that it would help to counteract "the present inflationary trend" in the cost of home building. The new price will be \$1.45 a barrel as compared with \$1.65. It is believed that the other northern California producers will meet the new price cut.

A new element of competition was introduced as the \$1.45 mill price will make the Northern California price level from 30 to 35c a barrel below that calculated for Southern California, following a 20-cent a barrel upward price adjustment permitted by OPA in September. Pricing methods between Northern and Southern California producers are not the same, the north using an f.o.b. mill price quotation which adds freight to destination and the south functions under a zone system which produces quotations at destination. Southern California's comparable price would be around \$1.70 to \$1.75 a barrel.

### Buys Lime Concern

THE NATIONAL GYPSUM Co. has made arrangements for the purchase of the Kimbalton Lime Co., Shawsville, Va. In addition to high-calcium lime produced at the Kerns, Va., plant, the company also has been marketing lime mortar. Officers of the lime company are W. T. Doosing, president; and S. C. Snead, secretary-treasurer.

### Producing Agstone

THOMPSON ROCK CRUSHING Co. has been in active operation during the past year supplying agricultural limestone to farmers in Wyandotte County, Kansas. The mine near Argentine, Kansas, was taken over by Milton W. Feld and associates of Feld Chevrolet Co., Kansas City, Kans.

### Sell Company

THE HUNKER SAND & STONE Co., formerly operated by J. E. Hays and Mr. R. Welty at New Stanton, Penn., has been reported sold to The Ellwood Stone Co., Ellwood City, Penn.

### January Cover

TYPICAL of some of the massive dam structures built by the federal government is T.V.A.'s Hiwassee Dam, illustrated on the front cover of this issue of ROCK PRODUCTS. This con-



Hiwassee Dam from the downstream side takes the spotlight on ROCK PRODUCTS January cover

crete dam is 307 ft. high and 1287 ft. long, and is located on the Hiwassee river in western North Carolina.

In the post-war era, it is expected that many similar dams will be built. One of the big projects under consideration is the Missouri Valley Authority which will involve a program of construction which will rival that of the Tennessee Valley Authority.

### Change Owners

W. G. FERNER, formerly president of the Somerset Limestone Co., Inc., advises that he has sold his interest in the company to J. S. Picking, Jr., secretary-treasurer of the company. Future operations will be continued under the same company name.

### Opens Lime Plant

NORTHWEST LIME Co., Enterprise, Ore., has been purchased by R. S. Painter, formerly with the United States Gypsum Co. The plant is now being reconditioned for operation.

### Continue Business

M. T. EPLING SAND & GRAVEL Co., Gallipolis, Ohio, is continuing in business under the management of the widow of the late M. T. Epling.

### Move Office

LIBERTY LIMESTONE CORPORATION has announced the removal of its general offices from Rocky Point, Va., to Buchanan, Va.



## Postpone Masonry Convention

NATIONAL CONCRETE MASONRY ASSOCIATION has postponed the annual meeting scheduled for February 7, 8 and 9 at the Sherman Hotel, Chicago, Ill. This action was taken by the board of directors in response to a request from the Office of Defense Transportation.

Executive Secretary E. W. Dienhart of the association in a recent bulletin has polled the membership as to their preference for a later convention, if conditions permit. His statement follows: "It is hoped that the progress of the war will reflect a more satisfactory situation so that it may be possible to hold our annual meeting in Chicago some time in May or June. We realize that these months are not as satisfactory as the month of February and we would like an expression from our members relative to whether they would be represented if we are able to call the meeting for May or June 11.

## W.P.B. Official Resigns

DR. WILBUR A. NELSON has resigned from the Minerals Resources Coordinating Division of the War Production Board after three and one-half years' service with W.P.B. and its predecessor, the Office of Production Management. This position will not be filled as the agency will be discontinued and the few remaining duties distributed in the office of the Metals and Minerals Vice Chairman. Next September Dr. Nelson will resume his position on the faculty of the University of Virginia. In the meantime he will devote his time to consulting work and in the preparation of his university courses.

## Longest Conveyor Dismantled

COLUMBIA CONSTRUCTION Co. has announced that the world's longest conveyor, which was used to transport 12,000,000 tons of aggregates from the crushing and screening plant at Redding, Calif., to Shasta Dam, will be dismantled and sold for use at other locations. The conveyor was in 26 separate sections, each driven by a 200-hp. motor.

## Erecting New Plant

COMAC BUILDERS SUPPLY CORPORATION, Rochester, N. Y., has erected a new concrete products plant which has been scheduled for operation in December. An office and warehouse also has been built at the new address, 186 Norman street.

## Correction

ON PAGE 31 of the November issue of ROCK PRODUCTS, under the heading, "Prices Pulverized Silica," there

appeared information which at the time of publication was incorrect. The National Industrial Sand Association had obtained an amendment of the O.P.A. order, deleting ground flint, quartzite and shale from coverage under MPR 327. The industrial sand industry is not subject to MPR 327 but to MPR 188.

## Close Gila Fluorspar Mill

INTERNATIONAL MINERALS & CHEMICALS CORPORATION, Chicago, Ill., has been informed by the War Production Board that its contract for the production of metallurgical spar at its Gila, New Mexico, plant will be terminated December 31, 1944, as a result of changing military requirements. This cutback does not mean that there is any lessening of all-over military requirements, but met-

allurgical spar produced by the Gila plant is no longer a critical item. Acid spar is still a most critical item, but it is not produced by the Gila plant. It is believed that some milling operations will be continued at this plant after December 31.

## Wins O.P.A. Suit

SEMINOLE ROCK AND SAND CO., Miami, Fla., won the second round in the O.P.A. suit brought against the company for alleged ceiling price violations, damages amounting to \$130,000. The federal circuit court of appeals in New Orleans recently upheld Federal Judge Alexander Ackerman who ordered the suit dismissed last March. The O.P.A. sought treble damages from the company in connection with the sale of crushed stone to the Seaboard Air Line Railway. Judge Ackerman ruled that only the ultimate consumer is privileged under the law to bring action for treble damages because of alleged charges above the ceiling. The appellate court opinion held that the sale price of the crushed stone, which was used for ballast, did not exceed the maximum price under Regulation 188, and that the seller had violated no law nor regulation.

The court held that the maximum price chargeable by the seller at the time of the complained of sales was \$1.50 a cubic yard, "and that it appeared there is no appreciable difference between a cubic yard of crushed stone and a ton of the same material." Following Judge Ackerman's decision, and while the government's appeal was pending, Robert G. Lassiter, president of the Seminole Rock and Sand Co., criticized O.P.A.'s action in a letter to Chester Bowles, and the matter was brought to the attention of the House committee to investigate executive agencies.

## Resume Mica Operations in the Spring

WESTERN STATES MINING COMPANY'S Floyd Hill mica mine near Idaho Springs, Colo., ceased operations in November until spring. Roy Phillips, vice-president, and Frank Witt, consulting engineer, in charge of operations, report that the mine was closed down because it would be practically impossible to traverse the steep road to the mine during the winter.

## Bomb Rubble Becomes Highway

AN INTERESTING ITEM in *The Quarry Managers Journal*, England, states that rubble from the bombed city of Bristol, England, is the foundation for part of the East City Driveway of New York City. The broken stone was transported to New York as ballast.

## CONVENTIONS COMING

**American Institute of Mining and Metallurgical Engineers, Annual Meeting, Pennsylvania Hotel, New York, N. Y., February 18-22, 1945.**

**American Society for Testing Materials, Spring Meeting, Hotel William Penn, Pittsburgh, Penn., February 28, 1945.**

**American Society for Testing Materials, Annual Meeting, Hotel Statler, Buffalo, N. Y., June 18-22, 1945.**

**Highway Research Board, National Research Council, Annual Meeting, Netherland Plaza Hotel, Cincinnati, Ohio; postponed indefinitely.**

**National Crushed Stone Association, Annual Convention, Hotel New Yorker, New York, N. Y., January 29-31, 1945.**

**National Ready Mixed Concrete Association, Annual Meeting, Hotel New Yorker, New York, N. Y., January 24-26, 1945.**

**National Sand and Gravel Association, Annual Meeting, Hotel New Yorker, New York, N. Y., January 23-25, 1945.**



## Complete Airport Contract

CONCRETE MATERIALS CONSTRUCTION Co., Inc., Cedar Rapids, Iowa, and M. O. Weaver Co., Inc., Des Moines, Iowa, are completing a contract to furnish over 180,000 tons of graded stone for the Waterloo, Iowa, municipal airport. The quarry was operated on Burton avenue near the outskirts of the city. Portable crushing plant equipment was used by these two companies for this job.

Although stone used for the sub-base of the airport could be stockpiled on the airport area, material used for the base construction had to be placed as it was delivered from the quarries as six sizes of stone were blended together and stockpiled material was held to be undesirable due to possible segregation of the sizes. Aggregate for the bituminous topping applied to all runways and taxiways had to be shipped into Waterloo as local stone did not meet specifications.

## Iowa to Grade Agstone

FOUR GRADES of agricultural limestone are to be established in Iowa, depending upon how fine it is ground and the neutralizing or calcium carbonate equivalent. Clark Huntley, Chariton, Iowa, farmer and member of the state soil conservation committee, and Clyde Spry, assistant state secretary of agriculture, have drafted a table of grades and requirements.

Suggested grades are as follows:

Fine ground—95 percent through No. 8 screen and 50 percent through 60 mesh.

Medium ground—85 percent through No. 8 screen and 40 percent through 60 mesh.

Coarse ground—75 percent through No. 8 screen and 30 percent through 60 mesh.

All others classed as screenings.

Grades based on neutralizing acid condition as follows:

A—90 to 100 percent calcium carbonate equivalent.

B—80 to 90 percent calcium carbonate equivalent.

C—65 to 80 percent calcium carbonate equivalent.

All below 65 percent classed as low grade limestone.

(5 percent tolerance for fineness.)

Enforcement of the proposed law would be with the state department of agriculture and violations would be classed as a misdemeanor.

## Penn. Stone Meeting

PENNSYLVANIA STONE PRODUCERS ASSOCIATION, Inc., has announced that the annual meeting will be held

January 17 in the Hotel Penn Harris, Harrisburg, Penn. The program, in addition to election of officers and directors and other association business, will include the following speakers: John U. Schroyer, Pennsylvania Secretary of Highways; John L. Herber, chief engineer; and William Herman, research engineer.

## Large Beryl Crystals

SOME of the largest Beryl crystals ever found have been taken from the Highland Lode mine near Custer, S. D. In 1940 a 7-ton crystal was uncovered, and in April, 1944, a 5½-ton crystal was uncovered. John Ross is now operating the mine. In addition to beryl, feldspar, mica and columbite are mined.

## May Build Limestone Silos

MICHIGAN LIMESTONE & CHEMICAL Co. is reported to be completing plans for the erection of several large silo storage bins in Perry, N. Y., with the object of making this a distributing point for its limestone products.

## Pass Highway Bill

PRESIDENT ROOSEVELT signed the post-war highway bill on December 20, authorizing a \$1,673,250,000 federal expenditure as part of a \$3,173,250,000 three-year program. States will supply \$1,500,000,000 on a 50-50 matching basis to become eligible for an equal amount of the federal money, authorized by the bill but not yet appropriated. The federal government would spend \$173,250,000 during the same three-year period for parkway, forest, and Indian reservation roads.

The program calls for the federal government and the states to spend \$225,000,000 each for each of the three years on the regular federal aid highway system, \$150,000,000 each on secondary, including farm-to-market roads, and \$125,000,000 each on federal highways entering cities.

In 1945, legislatures in 45 states will meet, permitting passage of legislation to appropriate funds to match federal appropriations. The state apportionment is approximately as follows:

APPROXIMATE ANNUAL APPORTIONMENT BY STATES BY KIND OF ROADS

State	(Thousands of dollars)		Urban	Highways	Total
	Federal-Aid Highway System	Farm to Market Roads			
Alabama	4,710	3,731	1,310		9,751
Arizona	3,232	2,235	264		5,731
Arkansas	3,855	3,104	561		7,520
California	9,012	5,158	8,166		22,336
Colorado	4,042	2,720	939		7,701
Connecticut	1,396	767	1,985		4,148
Delaware	1,097	731	205		2,033
Florida	3,232	2,165	1,608		7,005
Georgia	5,647	4,309	1,631		11,587
Idaho	2,780	1,945	213		4,938
Illinois	8,858	4,769	9,562		23,189
Indiana	5,408	3,626	3,082		12,116
Iowa	5,582	3,900	1,601		11,173
Kansas	5,667	3,978	1,113		10,758
Kentucky	4,200	3,403	1,307		8,910
Louisiana	3,360	2,517	1,540		7,417
Maine	1,948	1,404	564		3,916
Maryland	1,832	1,171	1,800		4,803
Massachusetts	2,942	766	6,649		10,377
Michigan	6,836	4,135	5,713		16,684
Minnesota	6,054	4,170	2,218		12,442
Mississippi	4,040	3,333	603		7,976
Missouri	6,662	4,564	3,168		14,394
Montana	4,546	3,106	309		7,961
Nebraska	4,479	3,162	787		8,428
Nevada	2,870	1,923	61		4,854
New Hampshire	1,097	731	478		2,306
New Jersey	2,864	1,042	5,558		9,464
New Mexico	3,632	2,515	259		6,406
New York	10,840	4,276	18,878		33,994
North Carolina	5,424	4,448	1,501		11,373
North Dakota	3,355	2,417	216		5,988
Ohio	7,904	4,658	7,581		20,143
Oklahoma	5,084	3,731	1,356		10,171
Oregon	3,730	2,545	815		7,090
Pennsylvania	9,194	5,276	10,574		25,044
Rhode Island	1,097	731	1,129		2,957
South Carolina	3,046	2,516	658		6,220
South Dakota	3,532	2,513	223		6,268
Tennessee	4,766	3,667	1,602		10,035
Texas	14,250	10,037	4,488		28,775
Utah	2,532	1,686	436		4,654
Vermont	1,097	731	187		2,015
Virginia	4,113	3,190	1,499		8,802
Washington	3,542	2,398	1,475		7,415
West Virginia	2,470	2,078	812		5,360
Wisconsin	5,416	3,668	2,609		11,753
Wyoming	2,709	1,899	134		4,832
Hawaii	1,097	731	396		2,224
District of Col.	1,097	731	1,153		2,981
Puerto Rico	1,110	1,133	839		3,082
Reserved for administration and engineering	5,625	3,750	3,125		12,500
Total	225,000	150,000	125,000		500,000

# HINTS *and* HELPS

## Practical Ideas Developed by Operating Men

### Home-Made Mucking Machine

By W. E. JOHNSON

MADE from old truck parts, second-hand steel shapes, two electric motors, and other material that is easily obtainable under present wartime conditions, the mucking machine shown in the illustration is working very successfully in pyrophyllite mining operations.

Two 8-in. I beams form the side frame members of the chassis, the cross members are motor supports and the rear axle housing. A 10-hp., 900 r.p.m. motor drives the machine through two truck transmissions. This motor is fitted with a coupling which accommodates a truck motor fly wheel and clutch pilot bearing, enabling the machine to be operated as an ordinary truck, except that it has 16 speeds forward and four in reverse. Of course the faster speeds cannot be used. The second transmission was put in the lowest speed and the shift lever was cut off short in order to give the most digging power.

Although the drifts in the mine are not less than 7- x 7-ft., the width and height of the mucking machine were kept to the least dimensions possible with the material used. The second transmission was connected through a universal joint and about 6 in. of driveshaft to the rear end of a Ford V-8 truck. A universal joint was used between the two transmissions and the first transmission and clutch were assembled close to the 10-hp. motor. As the motor was placed partly over the front axle the wheel base was kept down to less than 6 ft.

Springs were all discarded, and the I beams were bolted directly on the rear axle housing. The housing and live axles were cut down to an overall width of 54 in. In order to keep from making a weld in the middle of the live axles, the flanges were cut off the end and bored out a little larger than the axle; then the axles were assembled with the ends projecting through the flanges, the flanges bolted to the wheels and the welds made—assuring perfect alignment of the axle and flange.

The front axle was taken from a Chevrolet pick-up truck. It was also cut in the center and shortened, a gusset plate was welded to the top center—forming a center support and a splice for the welded joint, also providing the hinging action necessary for uneven surfaces. As the springs were not used, radius rods were necessary. These were made by

bending 1 in. rods and hooking them through holes cut in the spring pads in the axle and gusset plates under the side frames.

The steering mechanism and wheel were taken from the Chevrolet pick-up truck. As the wheel had to extend partly under the conveyor, the steering column had to be cut and welded. This is clearly shown in the illustration of the operator's side of the machine. Since this illustration was taken a cultivator seat and short runningboard have been added for the safety and convenience of the operator.

To provide traction, the Ford truck wheels were built out to accommodate two rows of tractor wheel spikes. Old spikes were used, and short

pieces of old truck springs were cut with sharp ends and welded on. In the mine the headings are shot on boards and the wheels give plenty of traction for loading the scoop, even after passing the ends of the boards. The front wheels were built up with two flanges similar to the Fordson tractor. These flanges were taken from discarded 24-in. air pipe.

The scoop lifting mechanism came from an old 4-cyl. Ford truck, the pump being installed inside the frame on the operator's side and driven from the first transmission, and the hydraulic cylinder was placed on the opposite side directly above the side frame. In order to keep the scoop from spilling before it has reached its dumping point a hinged door was



Above: Looking at mucking machine from side opposite operator. Note hydraulic scoop-lifting mechanism, propelling and conveying motors, and light on conveyor support. Center: Discharge end into mine cars. Below: Operator's side of machine. Note: Conveyor motor and chain drive, power cable and switchboard panel.

installed on the bottom lip. This door slides against a strap behind the tail pulley of the conveyor and dumps automatically at the right height for the material to spill onto the conveyor.

The conveyor is 14 in. wide and is driven at 150 f.p.m. by a 3 hp. gear-head motor. A three-conductor rubber covered cable furnishes the power to the machine and allows ease of movement from one heading to another. The total height of the machine with scoop raised is 5 ft. 6 in.

Since the accompanying views were taken the machine has been moved into the mine and put into operation. It loads a 1600-lb. mine car with two dips, requiring about three minutes, whereas it takes two muckers about ten minutes to load a car.

As shown in the illustrations, the machine backs up, pushing the 48-in. wide scoop into the muck pile. When the scoop is loaded it is raised, the ore spills onto the conveyor and is carried over the machine and discharged into a mine car.

## Make Your Own Manometer

By J. F. PRUYN

NEEDLESS to say, manometers are one of the most useful measuring instruments around the plant. The war has placed many new and old operations in a bad way because the procurement of these instruments is nearly an impossibility. Fortunately, they are an easy instrument to make, as shown in the sketches, Figs. 1 and 2.

A few handy points concerning their construction might prove of value. For making a good tough ce-

ment to anchor glass tubing in pipes, a slurry of litharge and glycerin will do the trick. For manometer liquids, you can use kerosene with a drop of methyl orange, methyl red or any other water soluble dye; even iodine can be used, but it will fade. Fluorescein is a greenish liquid that can be seen in the dark. Of course there are the old standbys—water and mercury. A drop of Aerosol in a water filled manometer will keep the water from clinging to the tube.

Fig. 2 shows the simplest way to calibrate a manometer without going through all the calculations involving

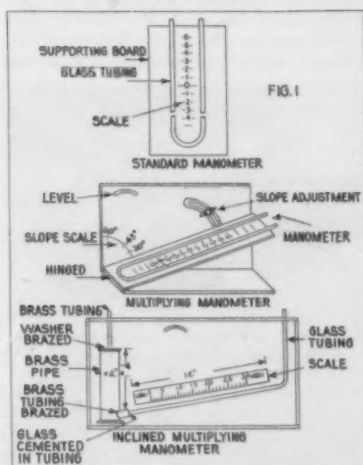


Fig. 1: Three types of manometer

specific gravity, etc. A standard "U" tube manometer, calibrated in inches, can't be very far off unless the glass tubing varies in I.D. Thus, if you use a simple "U" tube manometer for a

standard, and vary your pressure by simply lowering an end of rubber tubing into a beaker of water, you can calibrate any type of manometer in a few minutes.

## Catenary-Suspended Pipes

GEORGE F. PETTINOS, INC., is using a unique method of suspending pipe lines at its new Manumusk, N. J.,



Close-up of catenary type cable suspension for two 4-in. pipe lines

silica plant. As shown in the illustration, each grade of sand is pumped to its dewatering hopper through catenary-cable supported 4-in. pipe lines in preference to having structural supporting members which would interfere with operation of the stockpile crane. Under each hopper, 4000 tons of sand can be stockpiled for drainage to about 3½ percent moisture before shipping. It will be noticed in the illustration that there are two 4-in. pipe lines from the classifying plant to the dewatering hopper, one incoming and one overflow.

It has been suggested that this method of pipe or flume suspension may be adaptable to other rock products operations, particularly in the sand and gravel industry.

## Electrostatic Recovery of Florida's Rutile

HUMPHREYS GOLD CORPORATION is producing rutile and ilmenite from a 500-acre tract near Jacksonville, Fla., under lease from the Rutile Mining Co., of Florida, and its parent company, the Titanium Alloy Manufacturing Co. Sands to be treated are excavated by draglines and cleaned in a portable screening plant. They are then pumped to a spiral concentrating plant. Electrostatic and electromagnetic separators complete the concentrating process. Rutile and ilmenite are titanium oxides which are used in paint manufacture and in the production of steel and fine-grained castings.

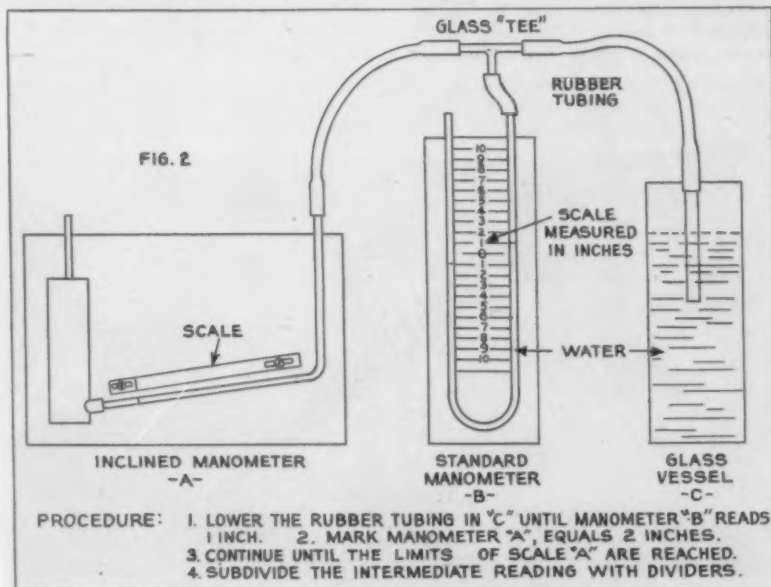


Fig. 2: Showing simple way of calibrating manometer



# NEW Machinery

## Review of Recent Equipment Developments

### Combination Crane Truck

THE ELWELL PARKER ELECTRIC CO., Cleveland, Ohio, has brought out its model L-11C combination crane truck which is said to have improved



Four-way truck, serving as a lift-truck, load carrier, crane and tractor

operating characteristics due to the addition of a separate motor for raising and lowering the boom.

In previous models a single motor served to raise and lower both boom and hook, by means of a ratchet boom adjustment which was actuated when the lift hook was pulled up against the boom. By providing a separate motor for each function the operator is given a greater freedom of choice in manipulating the load.

As shown in the illustration, the crane truck may serve as a lift-truck, a load carrier, crane and tractor. It loads itself either by picking up skid loads with the lift platform, or by lifting heavy parts and placing them on the platform for transport. As a tractor it pulls trailer cars, and the crane may be made available for heavy lifting at points where there are no overhead cranes.

The model shown has a capacity of 6000 lb. on the platform, 2000 lb. on the hook at 42-in. radius and 1000 lb. on the hook at 84-in. radius. It travels at 6 miles per hour with no load and 5 miles per hour with full load under normal conditions.

### Self-Propelled Earthmover

WOOLDRIDGE MANUFACTURING CO., Sunnyvale, Calif., has designed a self-propelled earthmover, known as the Terra-Cobra, which embodies several new features.

Positive two-wheel hydraulic steering gives the operator full control of the unit by maintaining a fixed direction of travel over all types of grounds and at all speeds; no steering clutches nor individual front wheel brakes are employed. Both drive wheels turn at exactly the same

time under full traction and power by means of a single steering bar. It is powered by a Diesel engine with four speeds forward, plus a reverse gear, and attains travel speeds up to 20 m.p.h.

The machine is said to possess great flexibility over rough, rocky or uneven surfaces. This is accomplished by means of a large universal, oscillating king-pin which couples the prime-mover to the heavy duty scraper. Due to its dual operating



Earthmover unit suitable for stripping and road construction operations

action, this pivot allows free radial turning to right or left while either or both units are tilted in opposite diagonal planes. Braking power is applied by air brakes on the rear of the scraper and equally on both wheels.

Another feature is the air-operated cable hoist which responds instantly to the touch of the finger.

### Bag for Quicklime

BAGPAK, INC., New York, N. Y., has designed a so-called cushion stitch sewn, open mouth bag which is

claimed to be particularly suitable for packaging pulverized quicklime. This bag has a 17-in. face, a 3-in. gusset, and is 35 in. long. It was made from one 40-lb. sheet of natural kraft paper, the next ply is one 90-lb. sheet of asphalt laminated, and the two outer plies are made from a 50-lb. sheet of natural kraft paper.

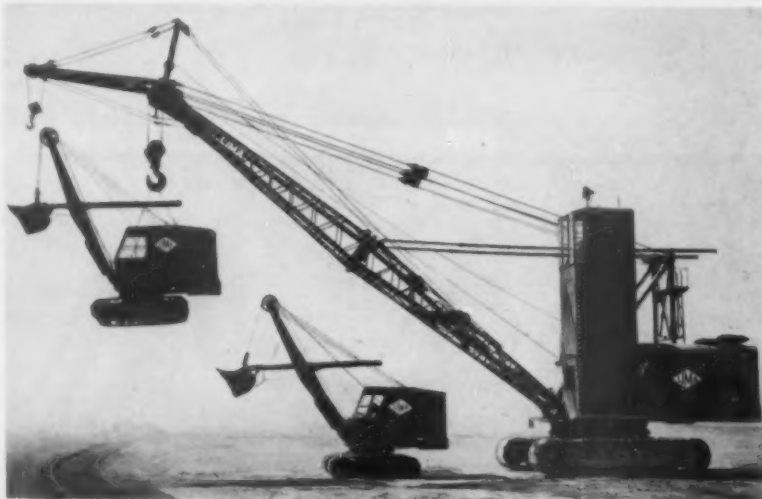
The bag under experiment was closed on the company's "DA" Bag-packer. The walls of the bag were first sewed together and then asphalt-laminated tape was applied over the needle holes with a special adhesive. It is claimed that no air or moisture can get in the bag.

### Large Combination Crane, Shovel and Dragline

LIMA LOCOMOTIVE WORKS, INC., Chovel and Crane Division, Lima, Ohio, has added a large combination crane, shovel and dragline which is known as Type 2000.

As a crane it has a lifting capacity of 100 tons, when equipped as a shovel or dragline it has a capacity of 5 cu. yd. The Type 2000 differs from other Lima machines in that the drums are in tandem. It is equipped with air-control which simulates the smooth, quick, positive movement of steam power.

It is powered with either a Diesel or electric power unit, and can be converted in the field from one combination to another without major dismantling. With this new unit, the company's line now ranges from 3/4-cu. yd. to 5 cu. yd.



Equipped for special crane service requiring a high control tower, this unit has a lifting capacity of 100 tons



## Dragline Bucket

PETTIBONE-MULLIKEN Co., Chicago, Ill., has designed an all-purpose dragline bucket and pull shovel dipper. The bottom of the bucket is a full-length, one-piece manganese steel casting which provides a foundation of great strength for the remainder of the bucket body, and makes possible integral tooth holders. Reversible socket type teeth also are of manganese steel. It is claimed that the solid manganese



Dragline bucket has full-length, one-piece manganese steel casting bottom

steel bottom makes possible the location of the outside tooth holders at the extreme corners of the lip, thus making an effective wide bite with the corner teeth breaking up the material with the lip to perform the scooping function only. It is made in  $\frac{1}{2}$  and  $\frac{3}{4}$ -cu. yd. sizes.

## Light Conveyor

GEORGE HAISS MANUFACTURING CO., Inc., New York, N. Y., has brought out a portable conveyor, known as the Junior Cargo Conveyor, which has been designed for handling smaller and lighter products; such as, concrete block, brick, etc. It is available in belt width of 16, 20 and 24 in., and in lengths from 20 ft. to 40 ft. Either gasoline engine or electric



Electrically driven, light-weight portable conveyor with 16 in. belt is 25 ft. long

drive can be furnished. Rollers which support the belt are of the ball bearing type, closely spaced.

## Improved Traction Tire

THE B. F. GOODRICH Co., Akron, Ohio, has brought out a newly designed passenger car tire, known as the Mud-Snow Silvertown, which is made with a tread having a button-bar design. It replaced the former Super-Traction casing in the company's line.

The tire is now being produced in the 6.00-16, four and six-ply, 6.25/6.50-16, six-ply, and 5.25/5.50-17, four-ply. Primarily designed for combination service either on improved highways or off-the-road, the tread has been engineered to impart maximum traction on slippery, snow-bound highways, out of deep holes, through rutted mud-clogged side roads and lanes.

## Crushing Cubical Products

SIMPLICITY ENGINEERING Co., Durand, Mich., has discovered new uses for its D'Centegrator machine



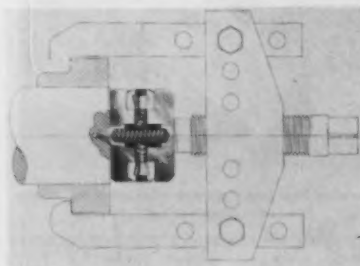
Crushing machine has varied uses

which has been employed principally for the elimination of soft stone particles. This machine has been found

effective, according to the manufacturer, in the production of cubical crushed stone particles, and has been used for the production of sand from fine material. A limestone crushing plant has been using the machine to produce agricultural meal.

## Shaft Protectors

KEYSTONE ELECTRIC Co., Baltimore, Md., has announced its roller bearing shaft protector which is illustrated herewith. This device con-



Pinion puller fitted with shaft protector

sists of two alloy steel plugs with movable centers, fitted into the races of a Timken roller thrust bearing. When inserted between the end of an armature or motor shaft and the stud of a pinion puller, it requires much less power and prevents damage to both the shaft and the center. As soon as pressure is applied the rotating plug turns freely on the roller bearing and with the screw stud. A set consists of eight units and three adaptor pieces to handle shafts from one to 4 in. in diameter, and it is packed in a wooden box.

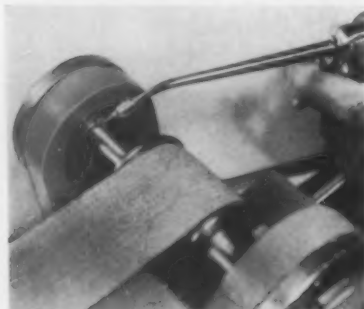
## Hard-Facing

HAYNES STELLITE Co., New York, N. Y., advises that large production requirements have made it increasingly desirable to mechanize some phases of the hard-facing process. In addition to the rotating units or jig, table rests, and other devices which have been used in the past to speed up hard-facing, automatic hard-facing machines have been devised for several applications requiring uniform hard-faced parts in quantities large enough to warrant the manufacture of these special machines.

Referring to specific applications, this company has pointed out that Hascrome rod has been used in repairing manganese steel parts and in reconditioning gyratory crusher mantles, dipper teeth, and other parts subject to severe impact. To solve wear on the blades of a sand mixer, Haystellite cast tungsten carbide particles were applied to the lower edge of the blades, where the wear was heaviest, and Stellite alloy to the front of the blades which received somewhat less wear.

## Sealed Bearing

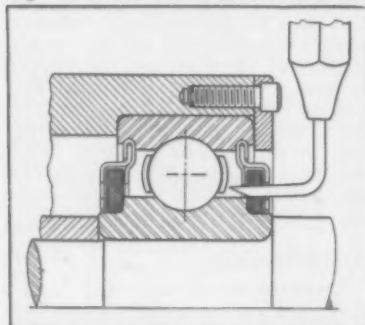
NEW DEPARTURE BEARING DIVISION, General Motors Corporation, Bristol, Conn., has developed a sealed bearing incorporating an injection system. As shown in the illustrations,



Showing how bearings are lubricated by means of needle penetrating felt ring

the seal, which is of slinger type, employs a hard woven ring of felt pressed on to the bearing inner ring against a high locating shoulder and enclosed by strong formed steel members permanently fixed to the outer ring.

To offset certain excessive operating conditions which tend to shorten



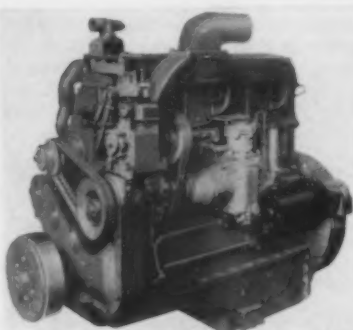
Bearing cross section, showing how needle penetrates felt

grease life, the seal has been designed so that a simple means for revitalizing the old bearing lubricant may be employed at intervals commensurate with operating conditions peculiar to any bearings or group of bearings.

By this method a hollow needle is inserted in one of the small holes in the outer metal of the seal and pushed through the felt. Enough fresh lubricant is then injected to recondition or revitalize the old lubricant in the bearing. When the needle is withdrawn, the resilient, tightly woven felt closes up, leaving no holes for passage of dirt or oil.

## High Speed Diesels

CUMMINS ENGINE CO., INC., Columbus, Ind., has announced the development of an improved series of engines, NH-600 and NHS-600, which



Six-cylinder Diesel with maximum rating of 200 hp. at 2100 r.p.m.

are higher speed and higher horsepower versions of the familiar Diesel Model H and its supercharged counterpart, the Model HS.

Increased output of these six-cylinder Diesel engines is obtained by increasing the maximum operating speed from 1800 r.p.m. to 2100 r.p.m. in the series NH and NHS, and by increasing bore and stroke from 4 3/8 x 6 in. (models H and HS) to 5 1/2 x 6 in. (Series NH and NHS), which increases piston displacement from 672 to 743 in. Dual intake valves are employed to provide the increased air supply needed. Dual exhaust valves permit the rapid exhausting of gases from the firing chamber.

The two new models employ the same four-stroke cycle principle of operation, and the same fuel distri-



Six-cylinder Diesel engine with maximum rating of 275 hp. at 2100 r.p.m.

bution and injection system as earlier models. Quantity production of the new models is anticipated by the middle of 1945.

## Crushing Plant Goes to War

PIONEER ENGINEERING WORKS, Minneapolis, Minn., has designed and built a large crushing plant for the Army Corps of Engineers to supply aggregates for airports and material for highways serving the front lines. The units shown in the illustration are in operation in France.

The plant, designed for crushing, screening and washing rock or gravel, is composed of nine separate units. It includes a jaw crusher, three roll crushers, screens, conveyors and washer. It has a rated capacity of 150 tons of aggregates an hour.

These plants are used for producing crushed, screened and washed aggregates for air bases, concrete construction, roads and camps. Practically any type of finished product required can be made with these units, says the manufacturer. The primary crusher has an opening 30 x 42-in., and if necessary sand can be produced in the final crusher.

Each plant requires nine flat cars for shipment. The plant is mobile, and can be moved on its own tracks and wheels to the location where it is set up and used. Similar plants were used in building the Pan American Highway and Alaskan Highway.



Large portable crushing, washing and screening plant which is used by the Army Engineers Corps in France

## Heavy Duty Scalper

SIMPLICITY ENGINEERING Co., Durand, Mich., has developed a heavy duty scalper for the aggregate industry and in mining. In the aggregate



Heavy duty scalper screen used for grading rip-rap material

industry, the scalper has been used chiefly for grading rip-rap material. The machine illustrated was shipped minus I-beams as it was to be mounted in a portable plant.

## Large Walking Dragline

BUCYRUS-ERIE Co., Milwaukee, Wis., recently delivered one of its newest and largest walking draglines, the 1150-B, to the Corrae Construction Co., Hazelton, Penn., for stripping overburden on the Beechwood project of the Philadelphia and Reading Coal and Iron Co. This type unit also is coming into increasing favor for stripping operations in the limestone operations around Youngstown and other centers producing fluxstone.

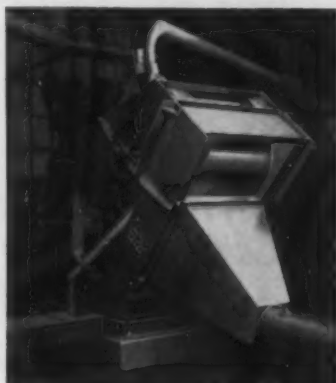
The 1150-B excavator illustrated can dig 140 ft. deep, and can cast stripped material 360 ft. from the point of digging. It has a 25-cu. yd. drag bucket on a 180-ft. boom.

The walking dragline is equipped with Ward-Leonard electrical control supplemented by Westinghouse Rotorol, on this particular machine, to speed up the operating cycle. There are two 425-hp. motors for the

digging, two 425-hp. motors for hoisting, and three motors of 125-hp. each for swinging. These d.-c. motors obtain power from two motor generator sets driven by a.-c. motors having a combined rating of 1750 hp., taking power from a 4000-volt transmission line. The independent hoist and drag drum machinery units are designed to use twin ropes of 2-in. diameter for the hoist and two ropes of 2½-in. diameter for the drag. The 1150-B has a maximum digging speed of about 250 ft. per minute. With a loaded bucket, it is capable of hoisting about 350 ft. per minute.

## Multi-Louvre Dryer

LINK-BELT Co., Chicago, Ill., has designed a dryer for low-cost drying or cooling of bulk materials which



Dryer mixes material with heated air

does not require long retention periods. As shown in the illustration, this dryer is a full enclosed unit, containing moving louvres supported on power-operated endless chains. The function of these moving louvres is

to present the material as it flows to secure the most efficient drying.

The mixing action and thorough contacting of the material with the heated air introduced into the unit is said to promote efficient drying and assure a uniformly dry material. The air which is drawn in through the moving mass of material and exhausted at the top of the dryer can be heated to the temperature best suited to the material being dried.

## Hinged Belt Fastener

FLEXIBLE STEEL LACING Co., Chicago, Ill., has developed its "Flex V" fastener for A and B section V-belts which has some interesting features.

As shown in the illustration, the fastener consists of two V-shaped end plates, an alloy metal hinge pin and self tapping screws for securely fastening the end plates to the belt ends. A simple applicator is used to prepare the belt ends, place and align the end plates and hold the



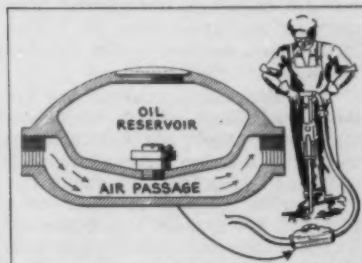
Fastener as applied to a B section V-belt

screws upright during the actual fastening process.

It is said that the separable hinge joint permits quick, easy replacement of V belts without dismantling line shafting or machinery. With no metal on the underside of the belt, Flex V fastened belts also can be run on a V flat drive.

## Lubricating Air Lines

RUCKER EQUIPMENT Co., Oakland, Calif., is marketing the Arnold automatic lubricator for use in lubricating pneumatic tools. It has been used with rock drills, air hoists, stoppers, drifters, air pumps, etc. As shown in the illustration, the lubricator is installed in the air line, and it is equipped with an adjustable feeder for control of oil flow to provide the proper mixture of air and oil. The oil reservoir may be easily filled under line pressure. There are three sizes of oilers, ranging from an overall length of 4 in. to 10 in.



Showing how automatic lubricator is installed in air line

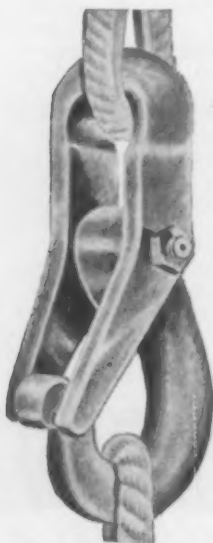


Walking dragline equipped with 25-cu. yd. bucket in foreground used for stripping. Unit in the rear rehandles blasted sandstone from the spoil pile



## Safety Hoist Hook

AMERICAN CHAIN LADDER CO., New York, N. Y., has placed on the market a patented heavy-duty, hoist hook having several safety features. A single No. 2 ACLC hoist hook



Hoist hook with self-locking shoulders and lips

weighs 9½ lbs., but it has a capacity of 10 tons and has been load-tested to 60,000 lbs., without any ill effects. A patented shoulder and lip is said to eliminate load slippage and hook straightening. Even should the heavy pin shear, it is claimed that the weight of the load would continue to hold on the safety shoulders and lips. The self-locking shoulders and lips were designed to clear protruberances without snagging.

## Rayon-Synthetic Tire

UNITED STATES RUBBER CO., New York, N. Y., has announced a new development in rayon tire construction which is said to provide stronger synthetic rubber truck tires and assures substantially greater tire production. Known as the "2200 denier" rayon type, the new development consists of using stronger but fewer plies in the tire, states Dr. Sidney M. Cadwell, director of tire development for the company.

The 2200 denier rayon tire has twice the number of filaments twisted together as the 1100 denier which was the standard type previously used and which the 2200 denier now replaces in certain sizes of tires. Blowouts are reduced to a minimum, it is claimed, and the stronger individual rayon cords reduce rupture spread, thus making it possible to repair injured tires by recapping.

## Revolutionary Pulverizer-Anza Mill

By NATHAN C. ROCKWOOD

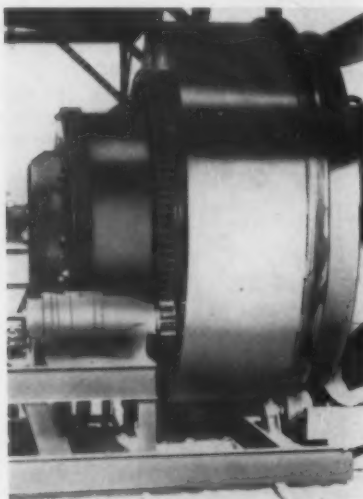
THROUGH OUR FRIEND, W. C. STEVENSON, well-known cement plant engineer and at present chief engineer, Elizalde & Co., Ltd., San Francisco, who are building a cement plant at Carrara, Nev., we were put in touch with ALLEN S. WHITE, general manager, Coastal Engineering, Ltd., San

and appears to be generally recognized as introducing entirely new principles, which bid fair to greatly reduce grinding costs, that have long been a problem to all who have to fine grind or pulverize rock and ores.

The principles of the new Anza mill are simplicity itself. Its chief mechanical features are illustrated in the accompanying sketch. The mill consists essentially of three elements—(1) a drum with lifting vanes, which revolves at 6 r.p.m., and discharges to a chute or hopper; (2) a bowl mounted on a horizontal axis or shaft which revolves at 1200 to 2000 r.p.m.; (3) a discharge compartment in the lower part of the drum housing which feeds the outflow launder. The novelty is that there is no grinding media except the material being ground. The high speed of the revolving bowl rotor holds the material in an inverted cone lining, and the feed falling against this retained material is pulverized by what the inventor terms "intensified interaction" fine grinding.

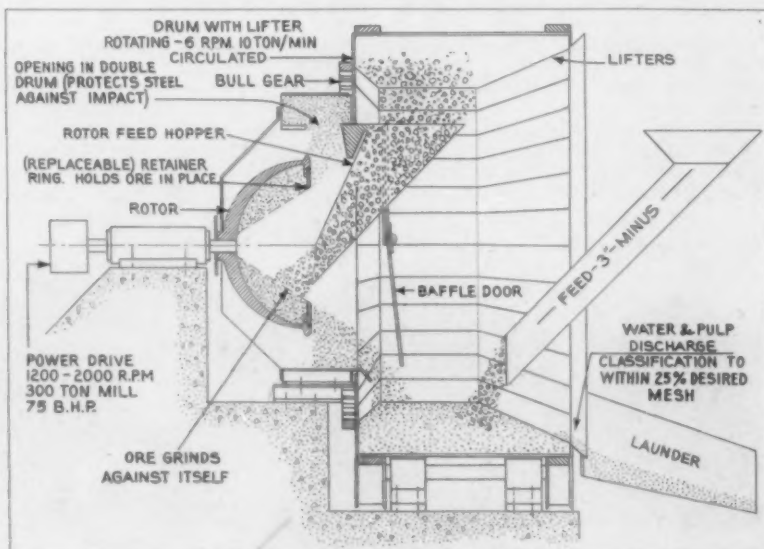
It is said that the major grinding action is accomplished by highly activated attrition of the rock mass rubbing forcibly upon its own particles, without destructive wear of metal parts, such as is present in all present types of grinding mills. The alloy steel bowl is self lining, and is rotated at high speed by a direct-connected electric motor or Diesel engine through a flexible coupling, which accounts for the extraordinarily low power consumption.

The only wearing part of the Anza



Pulverizer which does not require grinding media

Francisco, and GEORGE F. AINSA, also of San Francisco, manufacturer and inventor, respectively, of the Anza mill—a truly revolutionary development in the art of fine grinding or pulverizing. The Anza mill is already known to many mining engineers



Schematic layout of 300-ton centrifugal mill



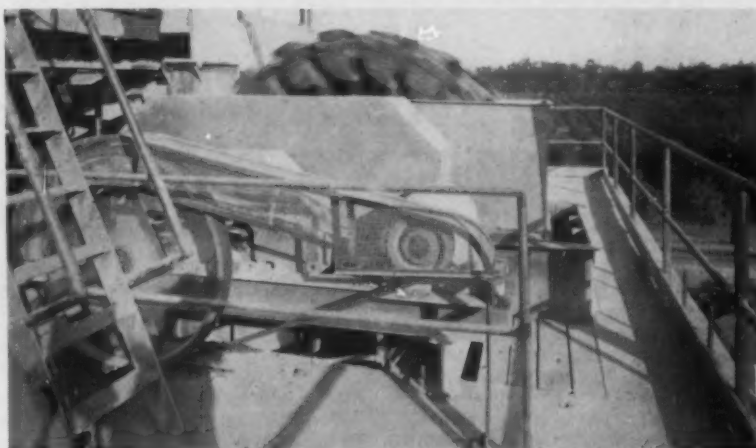
mill is said to be the cheap, easily replaceable retaining ring, which is bolted to the lip of the bowl, and serves merely to retain a part of the feed and ground material in the bowl. It has no grinding function and its only wear comes from the erosion caused by the ground material leaving the bowl at high velocity. It is claimed that the wear on this ring has been determined to be from one-twelfth to one-sixteenth of the wear on grinding balls used in ordinary ball mills operating on the same materials.

Another novel feature claimed for the Anza mill is that contrary to ball-mill practice, the capacity of the mill increases as the discharge ring wears to a larger inside diameter, since the capacity of the mill is directly proportional to the area of the circular opening. The object of the ring, as mentioned before, is merely to retain enough material in the bowl to serve as lining.

## The Inventor

GEORGE FOYE AINSA, the inventor of the Anza mill has been through the usual vicissitudes of a struggling inventor, whose ideas were so revolutionary that mining engineers were slow to accept, even when the principles of his invention had been demonstrated time and again. The reader may wonder why the inventor's name is Ainsa and the mill is called the Anza mill. The answer

is that Anza is the family name of Mr. Ainsa's grandmother, and is famous in the annals of the history of Mexico. Members of this family were royal governors of Mexico when it was a Spanish Colony. Mr. Ainsa's father was a notable Mexican and American mining engineer, Sr. San-



Sand dewatering wheel installation in California plant

tiago Ainsa, who from 1880 to 1925 was engaged in mining enterprises in Mexico, Arizona and California.

The idea of grinding as developed in the Anza mill came to the inventor from watching a Mexican

(Continued on page 205)

## Sand Dewatering Wheel

STEPHENS-ADAMSON MANUFACTURING Co., has some interesting operating data on its patented Buckbee sand dewatering wheel which has been in operation at the Saticoy Rock Co., plant near Ventura, Calif., since De-

cember 10, 1937. The wheel has handled about 800,000 tons of sand with practically no repairs or maintenance except for discharge chute liners.

Buckets of the dewatering wheel travel at about 25 f.p.m. through the settling tank. The rotation of the wheel causes practically no disturbance in the settling tank and there is ample time after the buckets leave the water line for the sand to settle to the bottom of the buckets and drain before they reach the discharge point. The machine consists of an 8 ft. diameter solid disc made of 3/4-in. steel plate that is mounted on a 4 1/2-in. diameter shaft, and rotated through gearing and a Texrope drive at a little less than 1 r.p.m. by a 7 1/2 hp. motor. Mounted on each side of the disc are 20 half-round bottom steel buckets that are 15 in. wide and 14 in. long by 7 1/2 in. deep.

The buckets have a deep "V" notch on their inner side, and are adjustable as to digging and discharge angle. As the buckets move through the bottom of the settling tank they fill with sand. After they leave the water line in the tank, the sand settles to the bottom of the bucket while entrained water flows through the V notch back into the tank.

Settling tank for the sand wheel is made of 1/4-in. steel plate, and is 4 ft. wide, 11 ft. long and 4 ft. deep. Across the feed end is a vertical barrier plate, extending below the water line and from the bottom of this plate to the end of the tank is an inclined perforated plate through which the incoming sand and water flow. This box distributes the feed

(Continued on page 236)

TABLE 1 COMPARATIVE POWER CONSUMPTION

—ITEM—	BALL	*ANZA	UNIT
CRUSHING TO 3/8"	2.8	—	K.W.HR. PER TON
CRUSHING TO 3"	—	1.5	
GRINDING 60% TO 200 M	14.0	4.0	K.W. HR. PER TON
TOTAL	16.8	5.5	

\* NOTE: A 300 TON ANZA MILL—RUNNING TO FULL CAPACITY WILL REQUIRE 75 B.H.P.— SHOULD IT BE DESIRED TO OPERATE AT LOWER CAPACITY, THE HORSE POWER CONSUMPTION DROPS OFF PROPORTIONATELY

TABLE 2 COMPARATIVE WEIGHT OF MILLS

	BALL	ANZA
WEIGHT POUNDS	90,000	14,000

TABLE 3 COMPARATIVE WEAR & UPKEEP  
(300 T. PER DAY ORE) MEDIUM HARD ORE - 60% - 200 M

MILL	WEAR LBS./TON	WEAR LBS./DAY	WEAR 300 DAY YEAR
BALL	2,000	600	180,000
ANZA	0.125	37.5	11,250

## —POWER IN MILLS—

K.W. HR. PER TON OF ORIGINAL FEED

OPERATION	AVERAGE 24 HOUR TONNAGE	UNITS
CRUSHING *	4 3.6 3.2 2.8 2.5	K.W.HR./TON
GRINDING	8 10 12 14 17	K.W. HR./TON
MILLING COSTS CENTS PER TON		
CRUSHING *	8 11 16 22 30	CENTS / TON
GRINDING	10 15 21 30 45	CENTS / TON

\* NOTE: CRUSHING TO 1" SMALL PLANTS: 3/8" MEDIUM PLANTS: 8M, LARGE PLANTS

## TRUCKS Supercede Locomotives

The Bessemer Limestone and Cement Co. shortens quarry hauls and speeds up deliveries by the use of trucks

By BROR NORDBERG

**A**FTER 41 years of quarry operation, The Bessemer Limestone and Cement Co., Youngstown, Ohio, has converted its haulage system from locomotives and cars to heavy-duty quarry trucks. The change was made gradually. A single truck was put into service hauling overburden in 1941 and, after analyzing the performance, the company converted the entire quarry haulage system to trucks in December, 1943.

A number of factors influenced the decision. A more flexible and lower cost haulage system was desired, and an increase in delivered capacity to the primary crusher, in order to reduce quarry operating hours. The length of haul, by locomotives and cars, had increased to three miles which was about three times the length of a more direct route from the quarry to the crushing plant.

Loading stone with 5-cu-yd. electric shovel

Other considerations having to do with the location and nature of the quarry, as influenced by the type of deposit, were important factors. The stone in the Hillsville district of Pennsylvania, where the quarry, crushing plant and cement mill are located, is a high calcium limestone that occurs in a 21-ft. horizontal continuous ledge. It is covered with 20 to 40 ft. of earthy overburden, part of which is shale.

The Bessemer Limestone and Cement Co. is a big producer of fluxstone for Youngstown and Pittsburgh steel mills and is manufacturing portland cement at the rate of 3500 bbl. per day with two kilns, in related operations, requiring a produc-

tion of approximately 300 t.p.h. of crushed stone. This high rate of production means that stone is being depleted at the rate of 14 acres a year. As a result, quarry activities are remote from the workings of a generation or two ago in the same quarry. The quarry keeps progressing in a southwesterly direction on a one-half mile face. It is obvious from the foregoing, that a truck haulage system would be more flexible and that more or less "permanent" rail lines would be left far behind.

### Build Two-Lane Road

One complication that arose was in connection with Pennsylvania State highway number 317, a con-



General view of quarry with shovel loading stone in truck and in the background may be seen two drills in action

necting road from Bessemer to Youngstown, that crossed the company's property at right angles to the direction of quarry development. Permission was secured from the Pennsylvania Highway Department to abandon this stretch of road, almost a mile in length, for a period of three or four years, in order to permit continuous development of the quarry. Part of the deal was that the company would relocate the road and rebuild the original stretch on a fill. At the time the decision was made to adopt quarry haulage, this road was rebuilt of 9-in. unreinforced concrete slab, 20-ft. width, by the company to conform with Pennsylvania State Highway specifications. The detour will be scrapped with further extension of the quarry.

This all figured in the type of haulage to be used. If rail haulage was to be continued, an underpass would have had to be built at considerable expense and clearances would have had to be maintained. Furthermore, it is desirable to backfill the entire excavation with overburden rather than to continue to leave right-of-way space for trackage.

#### Truck Haulage Conditions

Present workings average a one-mile haul from the crusher, with a maximum of 6500 ft. Part of the roadway, for a distance of 3100 ft., out of the quarry is considered permanent and was built of concrete. It has two lanes 24 ft. total width, with a 12-in. unreinforced concrete slab for loaded truck haulage and 10 in. on the other side, built to Pennsylvania highway specifications. For the rest of its length the roadway is of crushed stone placed to a depth of 18 in. This section, the ramp, will be relocated probably once a year as the quarry progresses, and new ramps will be built to connect with the concrete section. Stone in the various ramps will be reclaimed by power shovel after each re-location and



Trucks hauling rock from quarry to crushing and screening plant, one loaded and one returning to quarry. Note well maintained road

will be hauled to the crusher.

Truck haulage involves the negotiation of a 10 percent maximum grade, with a total lift of 60 ft. out of the quarry, requiring high-powered trucks for the capacities desired. Requirements are 300 t.p.h. of stone delivered to the crusher, of which 90 tons of 1½-in. minus screenings go into the manufacture of portland cement and commercial uses.

The first trucks purchased were Autocars and their use was principally for hauling overburden from locations where a 220-ft. stacking boom could not be conveniently operated. However, the bulk of the overburden is cast back into worked out areas at the rate of 500 t.p.h. by the stacker which is of the Greenville type. Wagon drills do the drilling, and blasting is accomplished by the buffer system. Stone is excavated and loaded into trucks by a 5-cu. yd. Ward-Leonard control Marion electric shovel on crawler treads. The truck fleet consists of three Autocar

trucks and five quarry type Euclids which have flared body construction to facilitate loading with the large shovel bucket. All the trucks are rear-dump and are powered by H. B. 6-cyl. Cummins Diesel engines rated at 125 b.h.p. at 1800 r.p.m. Each has double reduction type rear axles and a level full load capacity of 10 cu. yd., or 15 tons of limestone. Tires are 14 x 24 and 12 x 24 16-ply Firestone and Goodyear heavy-duty type.

One of the eight trucks is for standby, with seven in operation for excavation at the far end of the face and six for the short haul. Each truck averages 60 t.p.h. of stone delivered to a 48-in. primary gyratory crusher, completing four round trips per hour on a 1¼-mile haul. Maximum loaded speed is 25 m.p.h.

#### Truck Diesels Interchangeable

Complete operating data are not available, and would have little significance, for the reason that emergency rubber is in use, and loading capacity is held down somewhat, under present conditions, to lessen the loading on tires of synthetic rubber. However, each truck consumes an average of three gallons of Diesel fuel per hour which amounts to something less than ½¢ per ton of stone hauled. The tonnage of stone delivered to the crusher has been increased from an average of 220 t.p.h. to 300 t.p.h. since quarry trucks went into continuous service. Approximately 30 percent of this tonnage, under normal methods of drilling and blasting, is comprised of the 1½-in. minus screenings, a part of which is sold for concrete aggregate and the balance is used for cement manufacture. Considerable waiting time with locomotives was a factor in limiting performance with the former haulage equipment.

The life of one of these trucks had

(Continued on page 82)



Dumping 15-ton load of limestone into primary crusher. In the background, to the right, is the crushing plant



# Recovering Fines



Main plant, showing tremendous storage capacities over tunnel conveyors. Horizontal belt conveyor extending out to the left of silos is asphalt sand stockpiling conveyor

## Meet Fluctuating Demands Profitably

**Metropolitan Sand and Gravel Corporation reprocesses "waste" into asphalt sand; plant has proven flexibility, due to large storage capacities, for changing market demands**

**U**NPRECEDENTED DEMANDS upon production facilities followed by a period of depressed volume of construction business and almost no available labor, all during the war years, have afforded many producers of sand and gravel a background of experience that likely will influence their future plant designs.

Metropolitan New York has been as hard hit as any locality insofar as construction is concerned and, at last reports, the volume of business for sand and gravel producers was approximately 20 percent of normal. On the other hand, projected post-war construction projects totalling in the billions of dollars are being formulated for metropolitan New York. Insofar as sand and gravel producers are concerned, the change from almost no volume of normal business to anticipated record-breaking demands, which may come with dramatic suddenness, will merely be an exaggeration of normal business conditions.

New York City has always been a fluctuating market for sand and gravel, a city of intense competition for tremendous volumes of business and then a city where producers must be able to produce small volumes of material profitably. The successful producer must have flexible plant operations to meet these varying demands, that must also be flexible in their labor requirements.

We recently re-visited the Port Washington, Long Island, plant of the Metropolitan Sand and Gravel Corp. to see how such a huge capacity operation was being adjusted

By **BROR NORDBERG**

to today's abnormal conditions. This plant was built during the early war period, and went into production in 1943. The entire operation was described in the February, 1943, issue of *Rock Products* (pages 32-40).

In that article, we pointed out that the plant was designed in anticipation of a heavy post-war volume of production but with a flexibility and diversification of products for profit-

able operation in either a buyers' or sellers' market. We were impressed by the variety of grades of sand and gravel the plant was designed to produce, especially in the fractional inch size ranges. Among these "grit" sizes are a 1/10- to 3/16-in. product, one from 3/16- to 1/4-in., a 1/10-in. minus dry-screened brick and plaster sand (called Cow Bay), a 1/10-in. minus washed sand, and a 1/10-in. minus asphalt sand containing up to 25 percent minus 80-mesh.

In designing the plant, great emphasis was placed on the produc-



Sand settling pockets, comprising 30 in one unit, with adjustable discharge gates to a common belt conveyor



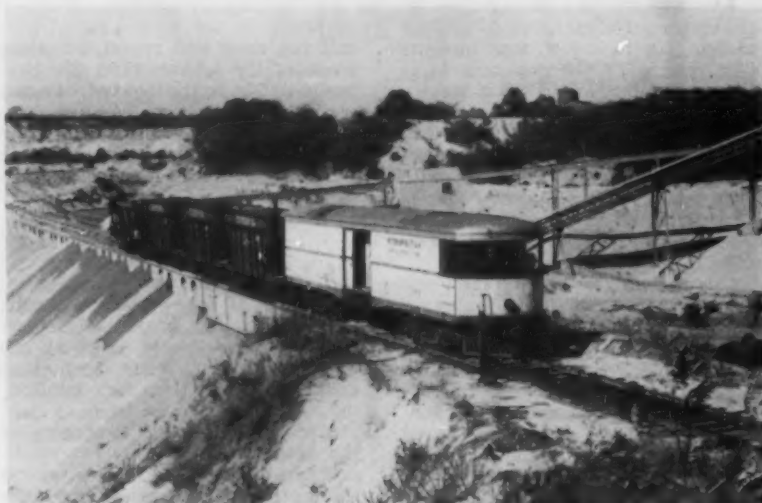
tion of many fine grades and the retention of fines, since the bank deposit contains 85 percent sand, of which only 5 or 6 percent is minus 80-mesh, and the design included the installation of fine reduction crushers to increase the production of more extreme fines below 80-mesh.

### Large Storage Capacity

We were also impressed at the sizeability of storage capacity, for finished products or partially processed materials, as well as bank run materials, and the facilities for conveying, loading, and blending the various stockpiled materials. Many plants of recent design have provided for reserve storages of unprocessed or partially processed materials as a safeguard against stoppages in operations but, in this plant, storage capacity of up to 150,000 tons of finished sand and gravel products and 12,000 tons of bank run material over reclaiming belt conveyors were provided principally in anticipation of wide fluctuations in business. And, thirdly, we were impressed with the layout of processing machinery which obviously was such that small plant tonnages could be produced profitably despite the tremendous potential capacity of the plant, of almost 1000 tons per hour.

In this article, we wish to show how operations under today's handicaps of labor shortage and far below normal demand have justified the original basic design of the plant.

One of the things of most interest to us on our recent inspection of the plant was that the company is reclaiming the accumulation of waste fines washed out in over 30 years' production at this location and re-



Train of four 40-cu. yd. cars on trestle under which is 12,000 cu. yd. of bank run storage capacity reclaimable by belt conveyor to plant

processing the fines in the production of asphalt sand. There is a good market for this product, at least, but tonnage hitherto has been limited by the fact that the main bank deposit contains only 5 or 6 percent minus 80-mesh fines. The waste accumulation, filling a basin of 25 to 30 acres to a depth ranging from 5½ to 9 ft. contains 35 to 38 percent minus 80-mesh.

Most of the specifications for asphalt sand, in New York City and surrounding markets, call for a range of 15 to 35 percent (average of about 18) minus 80-mesh. For example, the City of New York specifies 15 to 40 percent minus 10-mesh plus 40-mesh, 30 to 70 percent between 40-mesh and 80-mesh and 14 to 35

percent minus 80-mesh for new asphalt-type construction. The principal variation, for patch work, is that the range is 7 to 20 percent of the minus 80-mesh size. Production of this fine sand, for recombination on belt conveyors with other sand products in loading, is averaging 1200 to 1300 tons per 8-hr. day, and as a separate operation to the normal processing of sand and gravel.

Grass and other vegetation are bull-dozed from the man-made "deposit" of fine sand and excavation is accomplished by a 1¼-cu. yd. clamshell on a gasoline-powered Northwest dragline. Trucks haul the material to the raw material surge storage area, a short distance, where space has been provided for 500 cu. yd. storage over one end of the same reclaiming tunnel conveyor operated in the re-handling of stockpiled bank run sand and gravel. Thus, the same system of belt conveyors that handles bank run sand and gravel from storage into the plant is employed in the independent asphalt sand operation. In the plant proper (please refer to original article) only three power-driven machinery units are required. The fine sand is run through one of two 60-in. rotary scrubbers and over one vibrating screen where plus 8-mesh (mainly trash) is rejected. All the fines are laundered into one of the four 12-ft. Dorr bowl classifiers for dewatering.

Approximately two-thirds of the total sand is recovered as concentrate in the classifier. Its overflow, carrying the extreme fines, is laundered into a battery of settling pockets where practically all the remaining sand is settled.

Various methods have been devised since the plant was built to increase the percentage of recovery of fine sand. The system now in



Loading conveyor for transportation of finished products, or blends, and weighing scale at barge-loading tipple

use comprises three rows of settling pockets, ten in a row, that measure 4-ft. square at the top and taper to a point discharge. They are inverted pyramids. They are welded together as a single unit of 30 pockets, mounted in a horizontal plane over a common belt conveyor, with 18-in. skirtboards all around and a spread table to receive incoming water and fines from the bowl classifier at one end.

This system for settling sand was developed to handle 1000 g.p.m. of water plus sand and yet still the velocity at the overflow end to practically zero. Practically all the fine sand is recovered, which is the objective, since the asphalt sand produced is a blend of the fine sand produced by this independent operation and minus No. 8 bank run screened sand. The highest possible recovery of fines (up to 35 percent minus 80-mesh) for storage over a reclaiming belt conveyor, permits the blending of greater tonnages of the dry screened sand in combining to meet the various asphalt sand specifications.

#### Individual Settling Pockets

Each individual settling pocket has a manually-operated adjustable discharge gate through which the settled sand is released either directly on to a horizontal belt conveyor for stockpiling or by way of a transfer chute to the same conveyor from the outside rows of pockets. Dewatered sand from the bowl classifier is passed through a chute on to the same belt.

In operation, the first third of the settling pockets fill up almost immediately and the balance require more time to fill with extreme fines. To keep the solids discharging, the gates are set partially open on the first three banks of pockets and the gates on those near the overflow end are opened about every 20 minutes.

#### Blending

All processed grades of sand and gravel in this plant are stockpiled or placed in bins over 36-in. tunnel belt conveyors for reclaiming, with or without blending, to loading bins or for loading 550- to 600-cu. yd. capacity barges. Blending through adjustable bin gates underneath the stockpiles is very accurate and, according to the superintendent, it has been possible to hold to a definite percentage of minus 80-mesh with a variation never to exceed plus or minus two percent. A man is stationed in the tunnel, while loading, to manipulate and adjust various combinations of draw gates and he has a direct telephone connection to the barge loading tippie where sieve tests are run every 15 minutes.

Reclaimed sand is processed through the plant as an independent

operation to the processing of normal run sand and gravel, otherwise much of the asphalt sand fine sizes would be lost in the overflow. During periods of production from the main bank deposit, a limited volume of asphalt sand fines is produced, as well, along with other grades of sand and gravel.

#### Flexibility

The basic design of the plant, with its separate and independent operations of excavation, processing and loading, has proven a lifesaver during this manpower crisis. While a crew of 22 men could be used to advantage, operations are continuing with 15 men by a system of staggering their activities according to the needs.

Either excavation, processing or loading operations can go on independent of the other two, or excavation can proceed while barges are being loaded with the processing stopped, or excavation can continue while processing is going on and no loading is done. Similarly, loading can proceed while either the excavation and processing operations, or both are stopped, or the plant can grade materials while neither the excavating or loading operations are active, etc.

#### Asphalt Sand Operation Staggered with Main Production

The independent operation in the production of fine asphalt sand from reclaimed material has the same flexibility, although the actual processing through the plant equipment must be staggered with the sizing and screening of regular bank run material. Reclaimed sand might be excavated during the day and the plant run at night in the production of asphalt sand, without interfering in any way with normal bank run operations and production.

The plant has proven foolproof insofar as it has the ability to continue operations despite breakdowns. Either the field operation or the washing plant operation can be shut down for a considerable period of time for repair without stopping the other. Security, in the loading out operation, is provided by having spare electric motors for the loading equipment, which are the only units which could possibly go out of commission and stop operations for any considerable time.

W. A. Atkins is president of the Metropolitan Sand and Gravel Corp., which also operates a plant at Northport, Long Island. H. F. Garvin Peluse is vice-president and general manager; L. L. Phelps, vice-president and secretary; J. P. Leonard, treasurer; E. D. Boylston, assistant secretary; and B. J. Thompson is superintendent.

#### Haulage

(Continued from page 79)

been considered as eight years in calculating the economics of truck haulage versus rail haulage at the time of the conversion, and every effort is being made to attain that goal or better. Besides having one complete truck for standby, the truck engines are interchangeable between trucks.

All repair and maintenance work, including motor overhauls, is done in the shops at the plant. The mechanics are experienced on Diesel engines, since the company had operated other Diesel-powered equipment since 1937 and the men previously had been schooled in Diesel mechanics. There are two maintenance men on truck equipment. Each truck is oiled and greased daily and part of the daily checkup includes overall tightening of bolts and nuts, re-fueling and the examination of tires for cuts. Tire inflation is checked religiously. Another practice followed is daily maintenance of the roadways, and a bulldozer is employed frequently to clear the roadway of loose stone. A grader and operator are used daily to maintain roads, even to keeping them clear of snow during the winter. In addition, big pieces of sharp stone in the vicinity of the shovel are picked up and one man checks over the tires while the trucks are being loaded. One of his jobs is to remove pieces of stone that lodge between the tire treads.

Experience has proven that tire maintenance is at a maximum during wet weather, principally for the reason that sharp pieces of stone often are hidden under puddles of water. More care is taken under those conditions in picking up pieces of stone around the shovel. Likewise, in hauling overburden the number of tire cuts is higher from rocks which are not readily visible.

The combination of producing crushed stone and portland cement simultaneously, both on a sizable scale, is rather unusual. Stone for cement manufacture, by the wet process, normally is a by-product to fluxstone which is produced in the 1½- to 4¼-in. size range. Yet, the cement mill is rated at 1,800,000 bbl. of portland cement annually. The mill has two 10- x 235-ft. rotary kilns and one 10- x 175-ft. kiln with an 8- x 60-ft. extension.

If the demand for portland cement drops, the fines incidental to fluxstone production may be stockpiled under cover at the cement mill. Conversely, if the demand for fluxstone drops, some of the stone can be crushed, for more fines, through hammermills.

R. E. Roscoe is vice-president in charge of operations at Bessemer and H. E. Reed is general superintendent.

# OUTLOOK FOR POST WAR BUSINESS . . .

## in the ROCK PRODUCTS INDUSTRY

By BROR NORDBERG

**A**LL SIGNS point to an assured high level of business activity for all the rock products industries after the war, in the principal markets these industries serve. Construction looms particularly large on the postwar horizon. We all look and hope for an early end to the wars, but already reconversion and postwar plans have had to be shoved back on the calendar because of unforeseen events in Europe. As a result, we cannot look for much of a speed-up in activity for the rock products industries, in filling postwar demand, until the latter part of 1945 and 1946.

We will comment briefly on postwar prospects, particularly in construction, later in this article but, for the aforementioned reason, we believe it more timely to consider 1945 prospects for business, trends in specifications, installations contemplated, new markets and products, labor conditions and plans for absorbing labor when the war is over. Regardless of the date of the war's end, individual company planning must precede the actual letting of postwar contracts whenever they come.

Accordingly, we have asked a number of producers of all types of rock products to comment on those subjects, and this article and others following largely are based on replies to our letter. These replies came from all sections of the United States and we are sincerely grateful for the response. The majority came from producers of crushed stone and sand and gravel, industries closely tied to construction, which undoubtedly will reach spectacular proportions after the war, but these industries have generally suffered by the lack of road-building and other construction in 1944.

### Estimates of 1945 Business

We first asked how the 1944 volume of business compared with sales in 1943 and for a prediction of 1945 volume in comparison with 1944. It was impossible to arrive at any tonnage figures for 1944, of course, but our returns indicated that 1944 volume did not decline considerably from that of 1943. Of the total returns, 43 percent reported a lower volume in 1944, 34 percent estimated a volume greater than that in 1943 and 23 percent stated that there was no appreciable change. On the other hand, 49 percent predicted that 1945

volume would exceed that of 1944, 34 percent expected to maintain 1944 levels and 17 percent anticipate a reduced volume in 1945.

### Conditions Are Spotty

There are far too many variables for those figures to be conclusive so we present them merely as an indication of what a select group of the larger and medium-sized companies anticipate in the immediate future. Taking the returns as a whole, it appears that 1944 volume was generally lower than 1943 in the southeastern States, in the Great Plains States and in the southwestern States. On the other hand, those reporting from the heavily-populated Eastern States and New England generally held their own in 1944 or experienced moderate declines in volume while in the Midwestern States the majority reported slight increases in volume or no decrease. Scattered producers in the far western States generally had increased volume in 1944 due to the accelerated tempo of construction and shipping for the Japanese war.

Timing of completion of war construction projects is one of the variables having a bearing on business conditions as reported. Where projects were completed in 1942, the major decline in demand already had occurred and, while 1943 volume had suffered considerably in comparison with 1942, the consensus seems to be that the year 1944 held its own fairly well when compared to 1943. Accelerated road maintenance programs, for example, accounted for moderate increases in volume during 1944. Where construction projects carried over into 1943, the 1944 record compared unfavorably.

Another variable that had an unbalancing effect in our attempt to compare the years 1943 and 1944 in any locality was the agricultural limestone production. Almost without exception, this market has held up well and will continue to do so in 1945. As examples, one producer of agricultural limestone reported that

the demand in 1944 exceeded the supply by several hundred percent while another said the demand may slacken a little in his territory in 1945 but that it will still far exceed his capacity.

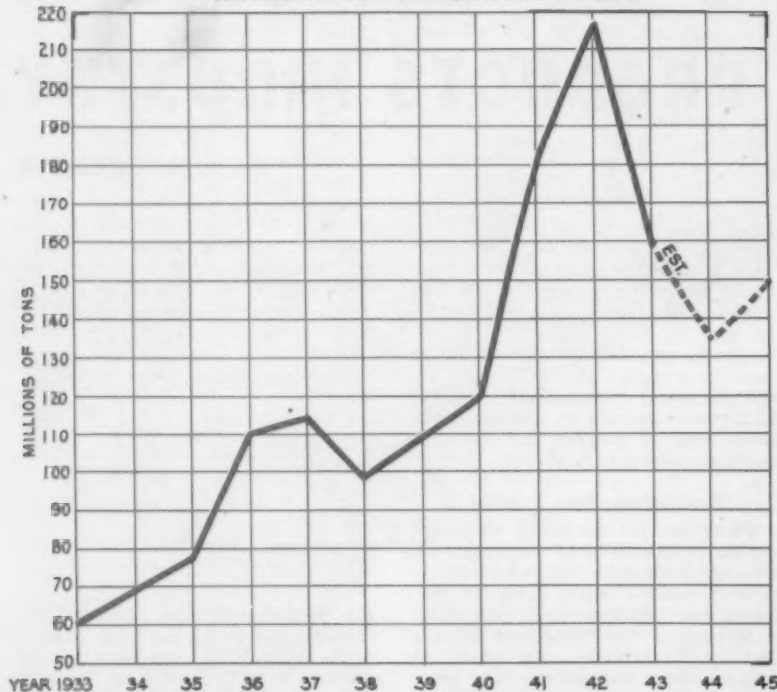
A third variable was that the degree of deviation between 1944 and 1943 could not be ascertained. We can only deal in numbers of companies. Where a decline was reported for 1944, the extent of the reduction in volume was generally moderate although, as extremes, one sand and gravel producer in Indiana reported a decrease of 40 percent in volume, one in Tennessee had the same experience, and one in Pennsylvania had just half as much business in 1944 as in 1943.

Increases in 1944 were generally moderate, from 5 to 25 percent, the exception being a producer of asphaltic limestone who experienced a 50 percent increase in 1944 over 1943. The use of bituminous mixes has increased to some extent in highway maintenance, patch work, etc., which explains his experience. Bureau of Mines figures for the first eight months of 1944 compared with a similar period in 1943 show a gain for petroleum asphalt and road oil of 3.2 percent despite restrictions on the manufacture and distribution of road oil. According to The Asphalt Institute, since Petroleum Directive No. 72 has been revoked as of September 9, 1943, the gain over 1943 will probably be greater by the end of the year.

In one of the Eastern States, a producer of crushed stone and sand and gravel said that while the volume in 1944 equalled 1943 volume, there was a higher dollar volume of



COMMERCIAL SAND AND GRAVEL SHIPMENTS



Commercial sand and gravel shipments for the years 1933 to 1943, inclusive, with estimates for the years 1944 and 1945, based on government figures and information received from producers

business by virtue of the sale of higher priced commodities. This condition is probably true in many other cases, particularly since there has been an increased demand made upon crushed stone producers for crushed aggregates in the smaller size ranges, which are costly to produce. In a number of plants, re-arrangements and additional equipment have had to be installed, sometimes as an auxiliary operation, in order to increase re-crushing capacity. More installations for this purpose may be anticipated in 1945 among aggregates producers and certainly in the postwar period when crushers and other machinery become available to all. On the other hand, a Mississippi producer of sand and gravel, while reporting an increased volume of business in 1944, received a lower price per unit of production since a sizeable proportion of his production was low-priced pit run railroad ballast.

1945 Prospects

A California sand and gravel producer has had an increasing volume of business in 1944 and the trend is still upward, while in other cases the only reason why 1944 volume suffered in comparison with 1943 was lack of labor. New products have helped hold volume up for a few aggregates producers, which will be discussed in another article in this issue.

With the exception of the South-

west in particular, 1945 is being looked forward to with mixed feelings of optimism and expectation. The timing of the war's end in Europe has considerable bearing on the anticipated volume of business in all

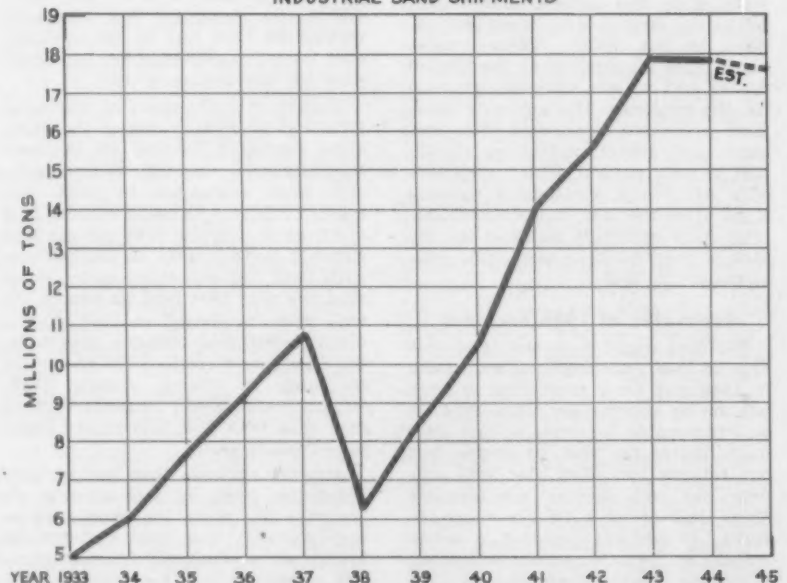
branches of the rock products industry in 1945. Many producers expect a slowly increasing volume of business, particularly in construction, throughout 1945 whether the war ends or not by summer as many prognosticators predict. Others expect 1945 volume to exceed 1944 if the war ends by the summer of 1945. Prevailing opinion is that the first half of the year will be uncertain and that volume will increase steadily the last six months of the year. On the other hand, an Ohio producer of lime and limestone expects to have an increasing volume if the war continues, with some slackening off when the war ends. Evidently he is shipping a considerable volume of lime and limestone products for chemical and industrial use where a transition period for reconversion from war production to civilian production is anticipated.

Comments on business conditions taken, in part, from a few of the letters received tell of local conditions.

Crushed Stone Producers' Views

A crushed limestone producer in West Virginia states, "Our business in 1944 was just about on a par with that of 1943 and we see no reason why, war or no war, our 1945 business should not be about as good in every branch of our market. We are very optimistic about the coming year. We are hoping and praying that the war will be brought to a close as soon as possible. While we feel that the immediate after effects

INDUSTRIAL SAND SHIPMENTS



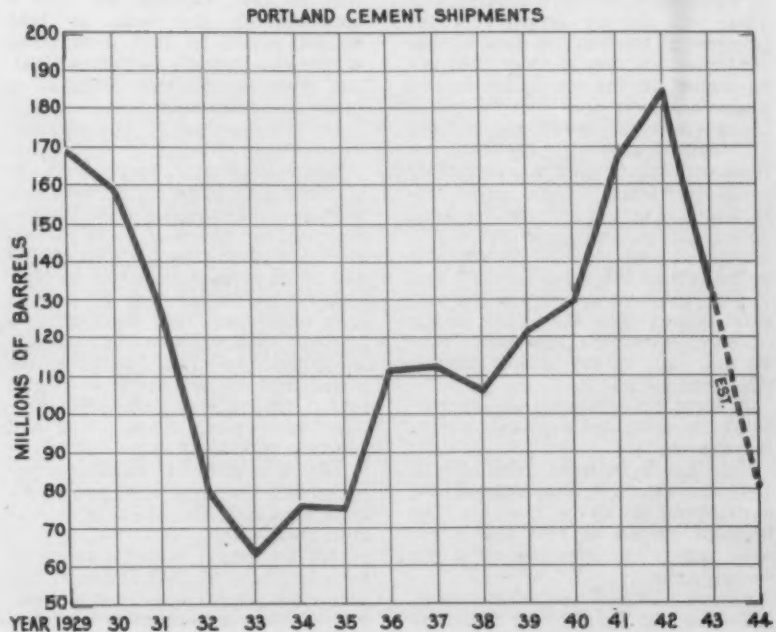
Industrial sand shipments (including glass, molding, grinding and polishing, furnace, and engine sand) for the years 1933 to 1942, inclusive, with estimates for the years 1944 and 1945, based on government figures available and information received from producers



of the war will tend to benefit business, we are convinced that this war, like all other wars, will sooner or later bring upon us manifold economic difficulties and the longer the war lasts the greater these difficulties are going to be."

A large Pennsylvania producer of agricultural limestone, flux stone and commercial aggregates wrote, in part: "Our opinion of the business outlook here is that it will be approximately the same in our case from the tonnage standpoint as it was a year ago. I do, however, look forward to a larger and more evenly distributed agricultural limestone business and with that thought in mind we are at the present time installing a second pulverizer which we expect to have in production in time for the Spring business. We are not making any further plant expansions for our coarser sizes."

A New York State producer of crushed stone and sand and gravel had this to say: "As to a comparison of 1944 business with that of 1943, our total volume was practically the same. We produce quite a diversified line of products, including sand, gravel, crushed stone, agricultural lime and blacktop asphalt paving materials. There was practically no highway contract activities during 1944 and the cessation of war construction activities, which had given us a good deal of business from 1941 through 1943, caused a drastic drop-off in the demand for concrete aggregates this year. Demand from political subdivisions for crushed stone



Portland cement shipments in millions of barrels for the years 1929 to 1943, inclusive, prepared from Bureau of Mines data. 1944 figure on shipments as estimated by War Production Board

used for highway maintenance held up very well, as did the demand for agricultural lime and blacktop. Total volume for 1944 in tons was practically the same as that for 1943, and dollar sales volume for 1944 exceeds considerably that for 1943, due to the fact that a large percentage of

sales this year were of higher priced products.

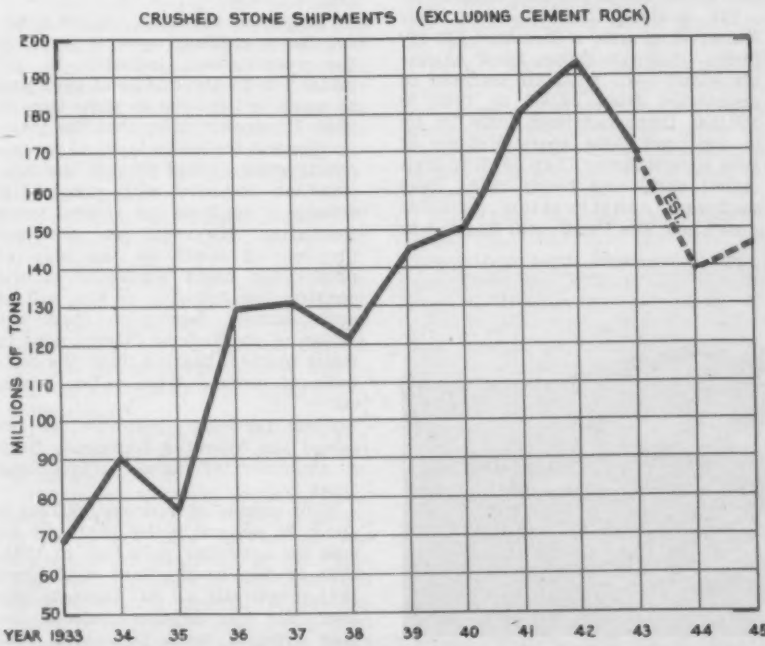
"The outlook for 1945 is spotty and uncertain. We expect that the demand for agricultural lime and blacktop will continue about the same as for this year. Highway maintenance likewise about the same. Demand for concrete aggregates will depend entirely on how soon extensive postwar public works projects are set in motion. New York State has a large cash reserve set aside and earmarked for postwar construction use."

A New England producer of crushed trap rock stated: "The crushed stone business in our section was better this year than last year. We hope that 1945 will show further improvements. This prospect will be sure if the war is over in Europe by next spring."

He also cautioned the industry as follows:

"The crushed stone industry will have as a major problem the ability to meet demands which will probably exceed anything we have ever known. If the existing manufacturers of stone do not take care of their market we may see an era of additional plants which will mean the ruination of the market after the federal spending boom is over. Our advice to the industry is to put the plants in shape as soon as possible and do their best to provide good service when the boom comes. It is later than we think."

A large producer of limestone and lime in Ohio comments:



Crushed stone shipments for the years 1933 to 1943, inclusive, and estimates for the years 1944 and 1945, based on government figures and trends indicated by questionnaire returns from producers

"Business in 1945 as compared with 1944 will depend largely on the progress of the war. So long as war continues, volumes in most lines will be higher. In the conversion period, business should drop sharply, but it seems reasonable to expect that the shortage of goods in practically all lines will bring about a satisfactory level of civilian demand almost immediately. Postwar demand, however, will not attain war levels but should continue good for a considerable period. Costs will continue high and any profit from operations will depend largely upon the ability of the producer to secure reasonable production costs in the face of difficult labor conditions."

A Kentucky producer of agricultural limestone and limestone aggregates wrote:

"We think business prospects in 1945 are excellent, especially in the agricultural limestone business. The business offered in 1944 was probably two or three times what we could supply."

From a leading producer of crushed limestone and agricultural limestone in Iowa we received the following:

"It is nigh impossible to predict what is ahead of us in the early post-war years but there is every reason to believe that construction would be one of the major activities. The year 1944 called for a lot more railroad rip rap than 1943 due to flood conditions. There was less demand for concrete stone but a larger demand for road surfacing stone and an increased demand for agricultural limestone which, however, we could not meet due to manpower shortages and lack of tires and truck delivery equipment. We were not granted any price relief over our 1941 base. In 1945 there appears to be less demand for railroad rip rap but more crushed stone due to an airport under construction and likely less agricultural lime."

A producer of crushed granite in South Carolina wrote in part:

"Tonnage in 1944 was about 60 per-

cent of 1943. Outlook for 1945 is approximately the same as 1944. Market outlets in 1944 show about 40 percent increase in railroad ballast with considerable decrease in Army and Navy work."

Another producer of crushed granite, in Georgia, said:

"Conversion from war work to highway and commercial work has been gradual dropping from 90 percent early in the year to 35 percent at present. Our gross business in 1944 will be 25 percent less than in 1943, and I look for another 25 percent drop next year. This total decrease of 50 percent will still keep tonnage above pre-war levels. Next year the larger part of the tonnage will go into highways with substantial tonnage in general construction and concrete products."

A third producer of crushed granite, giving the opinion of the entire minerals aggregates industry in Virginia, said:

"We all expect business to be as good as it was in 1944 although this year (1944) was not as good as 1943. We feel that on account of the labor shortage, etc., that most of the states will have quite a lot of repairing to do on their major highways as well as secondary roads. This should keep the producers quite busy and with the new construction all of us should have plenty to do. We have recently had a meeting of our Virginia Mineral Aggregates Association and the above seems to be the general picture all over our State."

A California producer of crushed stone and ready-mixed concrete had this to say about business conditions:

"In a town like this, with four Kaiser shipyards, a Standard Oil refinery, Pullman shops, Ford Assembly plant, etc., with an increase in population from 23,000 in 1940 to 100,000, there has been little let up in the past three years. Volume of 1944 is even larger than 1943, though rather early and heavy rains have slackened construction activities somewhat. The Pacific war has nearly

doubled the tonnage out of this port, and the end of expansion in transfer and shipping facilities is not yet in sight, but it is anyone's guess how long it will keep up."

### Sand and Gravel Producers' Views on Business Conditions

By contrast with the foregoing optimistic reports, a producer of washed sand and gravel in Texas says:

"Our business for 1944 is about the same as 1943, or will come within 10 percent of 1943. Our 1944 business will be about 25 percent of our 1942 business. It seems to us that the sand and gravel business as a whole will not be profitable in the next four or five coming years, under present regulations, restrictions, tire rationing, gasoline rationing, O.P.A. regulations, Treasury Department heckling, etc. It will be difficult to do anything but keep the books and this will be difficult enough as we will be required to spend our time working on the books instead of producing materials. Unless the government gets it's foot off our neck it is going to push our head under."

From the East, a large producer of sand and gravel in Pennsylvania writes:

"Our 1944 business is showing a substantial drop as compared with 1943, due, mainly, to the large reduction in construction activity. The outlook for 1945 is uncertain, but will probably be low until toward the end of the year, as it will take some time for private construction work to begin its upward swing after V-E Day."

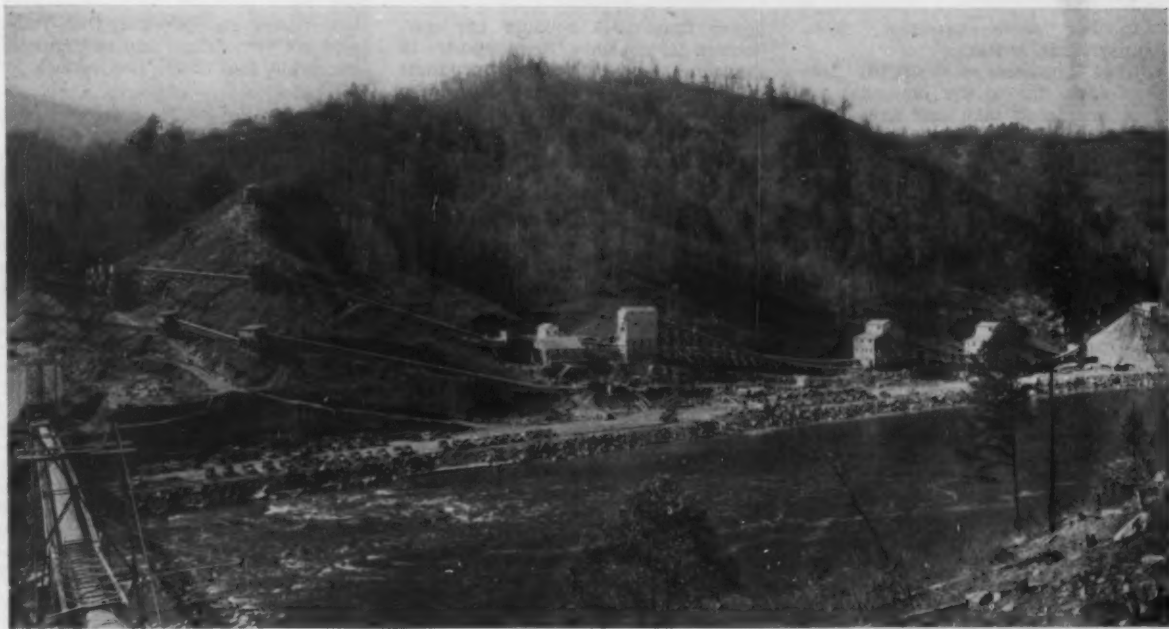
"Generally speaking, we are hopeful for a gradual upward trend in the construction industry to get under way by the middle of 1945, and to reach full volume by some time in 1946. It appears to us that the pent-up demand for many types of private construction should provide the construction industry with substantial volume of business for several years thereafter. However, we are not prophesying much in the way of profits for many segments of the construction industry, as this will be quite largely dependent upon the action of the Federal Government in many matters bearing upon the controls of prices, wage rates, taxes, etc."

From northern California we received the following comments from a producer of sand, gravel and "rock":

"Our volume of business for 1944 is about 20 percent below 1943 and we look for a similar reduction in 1945. This is due to the fact that since 1941 practically all our business has gone into war defense projects, the only type of work permitted, and these projects have been very heavy consumers of concrete aggregate. For



New agricultural limestone plant of Annville Stone Co. exemplifies how important farmers' markets are becoming



Aggregates plant for Fontana dam of T. V. A. may be forerunner of types of plant for some of the projected post-war dam projects

the past year these have been dropping off and completed, and while we understand some new work is contemplated it will of course not be nearly as extensive as has been the case. As soon as private construction is again permitted there will be some volume from this source but it will not compare in magnitude with the government projects that have been going on during the past three years.

"There has been a large amount of government sponsored housing in this area and with the departure of a considerable number of the people who came here especially for war work a great deal of this housing will probably be available either for rental or purchase, so new privately financed housing will probably be limited in volume."

A southern California producer of sand and gravel and ready-mixed concrete commented:

"The demand for crushed rock, sand and gravel in the Southern California area is continuing very satisfactorily and is pointing out the pattern for sizes, quantities, grades and specifications for future requirements."

Down in Mississippi, the operator of a hydraulic sand and gravel plant writes as follows:

"The year 1945 will probably be as good as 1944, but we expect a period of 90 to 120 days' lull in business when the European war is over. This year 1944 has been better than 1943 from a volume standpoint but the types of materials sold have been cheaper types such as ballast, road gravel and the like. Costs of operation have steadily mounted regard-

less of wage freezes, price control and all other hold-the-line schemes."

From northern Michigan, a producer of sand and gravel and ready-mixed concrete reports a slightly improved condition as follows:

"Referring further to your letter, our 1944 business was 8 percent greater than our 1943 and this additional business was not in any one particular field but was a cross-section over a general market. In 1945 our anticipation is about the same as 1944."

From Texas, in commenting on business conditions, a prominent sand and gravel producer has some interesting comments to make on labor conditions (the general subject is treated elsewhere in this issue) as follows:

"Our 1944 business was somewhat lower than 1943, and that year was lower than 1942, thank goodness. I could well say that our business for each of these years has been very close to our fullest possible output. The dearth of common labor has stopped all night shift work, as you simply cannot get men to work at night in our plants. Most of them are making good money, and they have to lay off or they are sick for many more days in the month than heretofore. It simply means that they have more money to spend than they can spend during their normal time off. In the case of Mexican laborers, they will not work beyond a certain income, and this is true in many instances of negro labor. Another strange thing is that lots of laborers will not work beyond a certain bracket in the withholding tax. We

had a job last year where the laborers would not earn one penny more than \$30 per week, because if they did the withholding tax jumped \$2.00 and as a result they stayed at that figure."

Business conditions have held up well in the West, according to a Utah producer of sand and gravel and ready-mixed concrete, who commented:

"Our business consists of supplying substantial quantities of railroad ballast in Utah and adjoining states and processing sand and gravel and ready mixed concrete in our local area. Our ballast business has been substantially the same in 1944 as in 1942 and 1943. Our ready mixed concrete business likewise has held up well, the large federal housing program in this area being responsible for maintaining comparable production. Our commercial sand and gravel production has fallen off greatly in 1944 over 1943 and 1943 was somewhat less than 1942. However, our 1944 production of sand and gravel here will be about the 1941 level, 1942 was nearly double the 1941 level and 1943 about 80 percent above the 1941 level."

#### Industrial Sand Producers' Comments

A number of producers of industrial sand replied to our request for information on business conditions and, as was to be expected, 1944 was a favorable year and 1945 is expected to be a good year as well. For example, a producer in West Virginia writes, "Business in 1944 was practically the same as in 1943 and the ratio of principal outlets was the same in 1944 as in 1943."



Another silica producer, from Pennsylvania, writes:

"1944 business was slightly less than 1943, due to the fact that we were unable to take any new business because of the manpower shortage. The outlook for 1945 is fair and should be about 90 percent of 1944 business. Our market was almost exclusively in the steel industry."

And a third member of the industrial sand industry, in the Southwest reported:

"Our 1944 business will result in approximately 50 percent increase over 1943. However, we had a fire at one of our plants in November, 1942, and did not get it back into operation until September, 1943. This accounts for the large increase of 1944 over 1943. We do not believe there was much difference in the demand in our territory."

An Eastern producer, specializing in foundry sands, sums up the situation as follows:

"As our entire production of industrial sand goes to the foundries of the country, we have been forced to maintain operations during the war period far beyond normal. This has meant continual plant expansion and improvement, and we are still in the process of further expansion."

"As far as business volume is concerned, 1944 business was slightly

lower than 1943 because our customers did not have the manpower to consume as much of our products this year as they did a year ago. We have also felt the manpower shortage and the slight decrease in production was a life saver as our operations throughout this year had been 100 percent of all we could possibly produce with the men available."

"We do not at this time see any sharp decline for 1945. We do feel the volume will be lower than in 1944 but even if the German war does end early next year, we do not believe the curtailment of war production in the area we serve will be severe enough to have any decided effect upon our volume."

### Miscellaneous Comments

Typical of business conditions in other branches of the rock products industries are the following comments received.

A manufacturer of lime in Ohio said:

"Business in 1944 was approximately 20 percent better than 1943. The outlook for 1945 depends a good bit on labor supply, the war and the election. We would estimate that it will be equal to 1944 or nearly so."

A talc producer in North Carolina reported optimistically, "Our 1944 business has been very light. We have

taken over an operation that failed and are remodeling and modernizing our plant and mine. The outlook for 1945 is good."

A producer of blast furnace slag in the South comments as follows:

"Pursuant to your recent request for certain information, I respectfully advise that our business did not vary very much in 1944 as compared with 1943, and we look for about the same business in 1945. The class of customers will change, and the type of construction will swing more to road construction rather than airports, powder plants, shipyards, etc."

### Concrete Masonry

A number of letters were received from manufacturers of concrete masonry units. An Eastern manufacturer of lightweight concrete slabs stated that 1944 business equalled the volume for 1943 and that a 50 percent increase in volume is expected as soon as the European war is over.

A manufacturer of a varied line of concrete products in Ohio outlines his business conditions as follows:

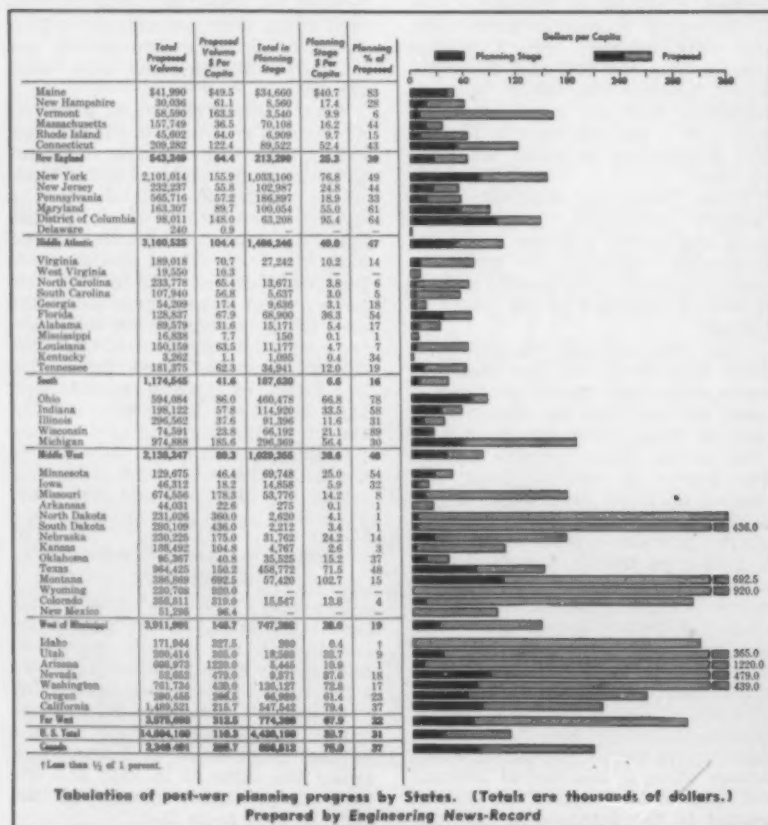
"Our 1944 business improved a little over 1943 with good prospect for 1945. Our principal outlet for this year has been large farm business followed by defense plant expansions and then private home repairs and improvements. As yet we don't anticipate any specification changes, post war, that will effect our production methods. The market here will probably remain the same, except on a larger basis due to the tremendous rise of concrete units for building factory warehouses, etc., that may help to educate the use of units in more volume after the war than before. The labor situation seems to stay acute and is expected to remain critical through 1945 and possibly for some time thereafter."

### Postwar Construction Prospects

Construction, including highways and residential building, comprise the biggest markets for producers of aggregates and manufacturers of portland cement and we, therefore, will briefly summarize the outlook for construction in this article.

However, other outlets such as industrial will continue in high volume if anything like the 80,000,000 jobs promised by the president is realized. Chemical markets should continue in good volume for producers of metallurgical stone, silica, fluorspar and other non-metallic minerals. A high level of production in steel mills and foundries turned back to civilian production will require great tonnages of flux stone and foundry sands.

With the tremendous backlog of needed housing, postwar construction has been estimated variously at be-



(Less than 1/2 of 1 percent.)

Tabulation of post-war planning progress by States. (Totals are thousands of dollars.)  
Prepared by Engineering News-Record



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ROCK PRODUCTS, January, 1945

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## CONSTRUCTION CONTRACT VOLUME BY DECADES (37 EASTERN STATES)

Annual Averages in Millions of Dollars

	1920-29	1930-39	20 Peace-time Years	Postwar Decade	Increase Over 1930-39
Commercial .....	730	247	488	475	92%
Manufacturing .....	400	158	279	210	33%
Educational .....	346	106	272	300	83%
Hospitals and Institutions .....	118	81	100	150	85%
Public Buildings .....	59	108	84	120	11%
Religious Buildings .....	115	38	76	95	150%
Social and Recreational .....	176	73	124	145	99%
Miscellaneous .....	49	25	37	80	220%
Non-Residential .....	1,993	926	1,460	1,575	70%
Residential .....	1,987	719	1,353	2,157	200%
Total Building .....	3,980	1,645	2,813	3,732	127%
Heavy Construction .....	970	950	962	1,425	50%
Total Construction .....	4,950	2,595	3,775	5,157	99%

These average figures (prepared by F. W. Dodge Corporation) would naturally be exceeded in some years; they would probably not be reached in the first year or two of peace.

Postwar figures assumed to be on basis of prewar costs.

Postwar decade assumed as beginning with the January nearest the date of cessation of hostilities in Europe, provided relaxation of construction restrictions starts at that time.

tween 750,000 and 1,250,000 units annually, which will afford large volume outlets for concrete masonry, aggregates, portland cement, mortars and gypsum products. Recent surveys have shown that a high percentage of farmers are planning to rebuild their homes and that something like \$400 per building is to be spent for farm building modernization and repair on a large percentage of the farms.

Soil building practices have become thoroughly established as essential, assuring that tremendous tonnages of agricultural limestone, agricultural gypsum, phosphates and commercial fertilizers will be put into the soil after the war. And many new products opening new markets have sprung into being during the war, which will be discussed in another article in this issue.

### Postwar Projects

Various planning organizations have developed comprehensive data on projected postwar construction projects, running into billions of dollars. The F. W. Dodge Corp. recently reported that as of the end of September, 1944, construction projects awaiting relaxation of government restriction on materials and manpower had accumulated to a total of 11 billion dollars in the 37 states east of the Rocky Mountains. Slightly more than 20 percent of the total dollar volume contemplated is to be built and financed by private interests, according to the report, the balance representing public projects.

Total nonresidential construction reported for postwar reached \$2,901,418,000 by the end of September of which \$1,187,759,000 represented private construction. The residential total had reached \$1,106,492,000 of which \$848,280,000 is represented in privately financed housing. Total heavy engineering construction, mainly public works and utilities,

amounted to \$7,000,838,000, practically all of which is to be publicly financed. Of the total of \$11,008,748,000 in postwar projects reported by the end of September, \$5,118,440,000 was already in the design stage.

In "Construction Potentials," by the F. W. Dodge Corp., published in *Architectural Record* and reprinted, it was estimated conservatively that total construction volume in the ten years following the war will average approximately double the average annual volume of the 1930-1939 decade and 5 percent over the prosperous 1920-1929 decade. The estimates are considered conservative and are based in terms of prewar cost levels. Residential building is expected to average three times the average residential building volume of the 1930-1939 period and non-residential building would increase 70 percent over its 1930-1939 average. Heavy engineering construction is calculated to increase 50 percent over the 1930-1939 average.

An assumed total construction figure is arrived at that will only be exceeded in each of the boom years 1925-1929 and in the war years 1941 and 1942. The F. W. Dodge Corp. has arrived at an estimate that an average of 820,000 non-farm dwelling units will be built in each of the first ten years following the war. In addition, F.H.A. officials have estimated residential repair work throughout the United States during the first 12 months after restrictions are lifted at \$3,000,000,000.

F. W. Dodge Corporation presents the following tabulation showing distribution of non-farm dwelling units estimated to be built in the first ten years following the war:

#### ESTIMATED NUMBER OF UNITS IN 10 YEARS

New England .....	372,000
Metropolitan New York and Northern New Jersey .....	976,000

Upstate New York .....	90,000
Philadelphia District .....	740,000
Southeastern Territory .....	947,000
Pittsburgh District .....	267,000
Cleveland District .....	214,000
Cincinnati District .....	233,000
Southern Michigan .....	340,000
Chicago Territory .....	809,000
St. Louis District .....	397,000
New Orleans District .....	264,000
Minneapolis District .....	250,000
Kansas City District .....	175,000
Texas .....	515,000

6,589,000  
11 Western States .....

United States .....

According to *Engineering News-Record*, projects proposed for postwar construction totalled \$14,504,160,000 up to September 30, 1944, of which engineers and architects were either at work on plans and specifications or had completed plans totalling \$4,438,190,000. Of the \$4,438,190,000 in planned project volume, \$1,025,604,000 is for engineered buildings, \$1,026,955,000 for street and road projects, \$400,706,000 for bridges, \$260,948,000 for waterworks, \$519,764,000 for sewerage, \$644,710,000 for earthwork and drainage, and \$559,503,000 for unclassified construction. The accompanying table shows projects reported by States.

The Producers' Council has recently released its forecast for 1945 construction indicating a total of about \$4,800,000,000 but based the estimate on the assumption that the war in Europe would be over, for practical purposes, by the end of 1944.

(Continue Outlook articles on page 167)

### Remove Restrictions on Cement Types

WAR PRODUCTION BOARD revoked its order L-179 which formerly limited manufacture of cement to three types. When the order was originally issued in August, 1942, requirements for portland cement for military and other essential construction work were unusually high and were expected to go higher. Total 1942 consumption was 185,000,000 bbls., the highest consumption figure on record. The order was designed to increase production of the three most commonly used types by prohibiting manufacture of modifications of these types. Other provisions of the original order, subsequently removed, had prohibited the earmarking of storage bins for individual customers.

Total actual capacity of the cement industry is approximately 215,000,000 bbls. per year. War Production Board, Building Materials Division, estimates that 1944 consumption will amount to an estimated 40 percent of this capacity or 88,000,000 bbls. If present construction restrictions remain unchanged, 1945 consumption is estimated at from 50 to 60 percent of capacity.

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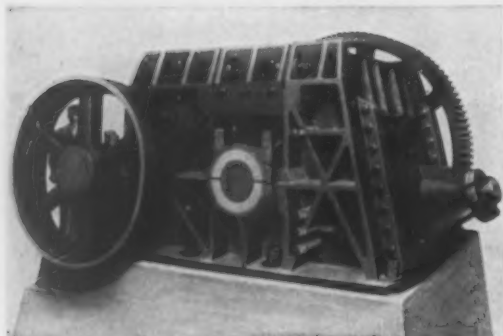
*Listen to the Voice of Firestone with Richard Crooks and the Firestone Symphony Orchestra, under the direction of Howard Barlow, Monday evenings, over N.B.C.*

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# 4 OUTSTANDING "PENNSYLVANIAS" FOR PRIMARY AND SECONDARY REDUCTIONS



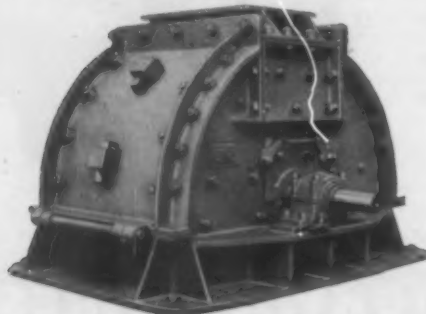
"Pennsylvania" Penn-Lehigh Primary Single Roll Crusher



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# ROCK PRODUCTS

## Directory of Manufacturers' Equipment

### 1945

• Machinery, equipment and supplies for the Rock Products' industries are listed alphabetically and the names and addresses of manufacturers indicated. A directory of Trade Names appears on pages 154-164.

• Advertisers in ROCK PRODUCTS are listed in bold-face type. The page numbers accompanying names in bold-face type refer to the pages in this issue on which their advertisements appear.

#### ABRASIVES

The Carborundum Co., P.O. Box 337, Niagara Falls, N. Y.  
Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio  
Tamm Silica Co., 228 No. LaSalle St., Chicago 3, Ill.

#### AD MIXTURES, Aggregate

Calcium Chloride Association, Penobscot Bldg., Detroit, Mich.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
Tamm Silica Co., 228 No. LaSalle St., Chicago 3, Ill.  
Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.

#### AERIAL TRAMWAYS

American Chain & Cable Co., Inc., Bridgeport, Conn., 58 & 3rd Cover  
American Steel and Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
The Cleveland Crane & Engineering Co., 1109 East 283rd St., Wickliffe, Ohio  
Columbia Steel Co., Russ Bldg., San Francisco, Calif. (U. S. Steel Corp. Sub.)  
Hazard Wire Rope Co., 81 E. Ross St., Wilkes-Barre, Penn.  
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
Pacific Car & Foundry Co., 4th and Factory Sts., Renton, Wash.  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
John A. Roebing's Sons Co., 640 S. Broad St., Trenton 2, N. J.  
The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.

#### AFTERCOOLERS, Air

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
The Macleod Co., 2232-40 Bogert St., Cincinnati, Ohio  
D. J. Murray Mfg. Co., Wausau, Wis.  
Pennsylvania Pump & Compressor Co., Easton, Penn.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.  
Ross Heater & Mfg. Co., Inc., 1407 West Ave., Buffalo 13, N. Y.  
F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Young Radiator Co., 709 S. Marquette St., Racine, Wis.

#### AGGREGATES, for concrete, lightweight slag, etc.

John H. Black Co., Buffalo, N. Y.  
The Carborundum Co., P.O. Box 337, Niagara Falls, N. Y.  
Carter-Waters Corp., 2440 Pennway, Kansas City 8, Mo.  
Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.  
Hydraulic-Press Brick Co., St. Louis, Mo.  
Hydraulic-Press Brick Co., South Park, Ohio  
McNear Co., San Rafael, Calif.  
Permanente Cement Co., Latham Square Bldg., Oakland 12, Calif.  
The Supercrock Co., 1202 Empire Bldg., Birmingham 3, Ala.

Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.

Washington Haydite and Concrete Products Co., Bothell, Wash.  
Wayliffe Co., 105 W. Madison St., Chicago, Ill.

Western Brick Corp., Danville, Ill.

#### AGITATORS (See Vibrators, etc.)

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn.  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y.  
Stow Mfg. Co., 443 State St., Binghamton, N. Y.  
Sutton, Steele & Steele, Inc., 1031 S. Haskell St., Dallas 10, Texas  
Syntron Co., 450 Lexington Ave., Homer City, Penn.  
The W. S. Tyler Co., 3615 Superior Ave., Cleveland 14, Ohio

#### AGITATORS, Slurry (See Slurry Agitators)

#### AIR COMPRESSORS, Portable

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.  
Curtis Mfg. Co., 1988 Klenlen Ave., St. Louis 20, Mo.  
Davey Compressor Co., 266 N. Water St., Kent, Ohio  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio

Kadco Corp., 30-40 Eleventh Street, Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.)

Kellogg Div.-American Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.

Le Roi Co., 1706 S. 68th St., Milwaukee 14, Wis.

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Novo Engine Co., 702 Porter St., Lansing, Mich.

O. K. Clutch & Machinery Co., Florence St., Columbia, Penn.

Quincy Compressor Co., 217 Maine, Quincy, Ill.

Schramm, Inc., Virginia Ave., West Chester, Penn.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Western Machinery Co., 700 Folsom St., San Francisco, Calif.

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

#### AIR COMPRESSORS, Stationary

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Bolinders Co., Inc., 33 Rector, New York 6, N. Y.

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.

The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio

Curtis Mfg. Co., 1988 Klenlen Ave., St. Louis 20, Mo.

Davey Compressor Co., 266 N. Water St., Kent, Ohio

DeLaval Steam Turbine Co., Trenton, N. J.

Fuller Co., Fuller Bldg., Catsaqua, Penn.

Gardner-Denver Co., Gardner & First Ave., Quincy, Ill.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio

Kellogg Div.-American Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee, Wis.

Novo Engine Co., 702 Porter St., Lansing, Mich.

O. K. Clutch & Machinery Co., Florence St., Columbia, Penn.

Pennsylvania Pump & Compressor Co., Easton, Penn.

Quincy Compressor Co., Quincy, Ill.

Schramm, Inc., Virginia Ave., West Chester, Penn.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

#### AIR CONDITIONING EQUIPMENT, Laboratory

American Blower Corp., Box 55, Roosevelt Park Annex, Detroit 32, Mich.

Buffalo Forge Co., P.O. Box 985, Buffalo 5, N. Y.

Clarage Fan Co., North & Porter St., Kalamazoo 16, Mich.

Curtis Mfg. Co., 1988 Klenlen Ave., St. Louis 20, Mo.

Gar Wood Industries, Inc., 7925 Filopelle St., Detroit 11, Mich.

Waukesha Motor Co., P. O. Box 379, Waukesha, Wis.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

Young Radiator Co., 709 S. Marquette St., Racine, Wis.

#### AIR CONVEYORS

American Blower Corp., Box 55, Roosevelt Park Annex, Detroit 32, Mich.

Babcock & Wilcox Co., 85 Liberty Street, New York 6, N. Y.

Bayley Blower Co., 1817 S. 66th St., Milwaukee 14, Wis.

Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.

The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.

Fuller Co., Fuller Bldg., Catsaqua, Penn.

Robinson Air Activated Conveyor Systems, Div. of Morse Boulger Destructor Co., 205 E. 42nd St., New York 17, N. Y.

#### AIR ENTRAINING AGENTS

Dewey and Almey Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.

Hercules Powder Co., 946 King St., Wilmington 90, Del.

Procter & Gamble, 1000 Gwynne Bldg., Cincinnati, Ohio

#### AIR FILTERS

Air Maze Corp., 5200 Harvard Ave., Cleveland, Ohio

American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio  
Dollinger Corp., (Formerly Staynew Filter Corp.) 11 Centre Park, Rochester 4, N. Y.

Draco Corp., 4043 E. 116th St., Cleveland, Ohio  
The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
Kellogg Division—American Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.  
The Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
Alexander Milburn Co., 1425 W. Baltimore St., Baltimore, Md.

The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio..... 154  
Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio..... 55  
Spencer Turbine Co., Hartford, Conn.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Sutton, Steele & Steele, Inc., 1031 So. Haskell St., Dallas 10, Texas

## AIR HEATERS

American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.

The Babcock & Wilcox Co., 65 Liberty St., New York 6, N. Y..... 22

Bayley Blower Co., 1817 S. 56th St., Milwaukee 14, Wis.

Buffalo Forge Co., Box 985, Buffalo 5, N. Y.

Clara Fan Co., North & Porter Sts., Kalamazoo 16, Mich.

Dravo Corp., Neville Island, Pittsburgh, Penn.

The Hell Co., 3000 W. Montana St., Milwaukee, Wis.

D. J. Murray Mfg. Co., Wausau, Wis.

Pratt-Daniel Corp., 54 S. Water St., E. Fortchester, Conn.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

Young Radiator Co., 709 S. Marquette St., Racine, Wis.

## AIR LINE LUBRICATORS

Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio

Hills-McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y..... 42

Knox Mfg. Co., 811-823 Cherry St., Philadelphia 7, Penn..... 232

Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo.

New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn..... 237

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

## AIR RECEIVERS, Tanks, Steel

Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, N. Y..... 40

Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo.

J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y..... 42

Kellogg Division—American Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.

Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio

Maddox Foundry & Machine Works, Archer, Fla.

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.

Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.

Pacific Car & Foundry Co., 4th and Factory St., Renton, Wash.

Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio..... 55

Pennsylvania Pump & Compressor Co., Easton, Penn.

Pittsburgh-Des Moines Steel Co., 3438 Neville Island, Pittsburgh, Penn.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Wisconsin Foundry & Machine Co., 623 East Main, Madison 1, Wis.

## AIR SEPARATORS

Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn..... 243

Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo.

Dollinger Corp. (Formerly Staynew Filter Corp.), 11 Centre Park, Rochester 4, N. Y.

The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.

Hardinge Co., Inc., 240 Arch St., York, Penn..... 825

Kennedy-Van Saun Mfg. & Engineering Co., 2 Park Ave. Bldg., New York 17, N. Y..... 10, 11

Kent Mill Co., 10 Rapelye St., Brooklyn 31, New York, N. Y.

The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio

McGann Mfg. Co., Inc., P.O. Box 1187, York, Penn..... 173

Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio..... 55

Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago, Ill..... 18, 19

Separations Engineering Corporation, 110 E. 42nd St., New York 17, N. Y.

Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass..... 39

Sutton, Steele & Steele, Inc., 1031 S. Haskell, Dallas 10, Texas

Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y..... 239

Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo..... 29

## AIR TRANSPORT SYSTEMS (See Conveyors, Pneumatic)

ALLOYS (Abrasion Resisting)

Allied Steel Products, Inc., 1721 NBC Bldg., Cleveland 14, Ohio

Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.

The Elmco Corp., P.O. Box 300, Salt Lake City 5, Utah

Electric Steel Foundry Co., 2141 N.W. 25th Ave., Portland 10, Oregon

International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.

Pacific Car & Foundry Co., 4th & Factory St., Renton, Wash.

Joseph T. Ryerson & Son, Inc., 16th and Rockwell Sts., Chicago, Ill..... 169

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y..... 129

Stoody Co., 1134 W. Slauson St., Whittier, Calif..... 48

Taylor-Wharton Iron & Steel Co., High Bridge, N. J..... 16

Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn..... 9

Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

The Webb Corp., 402 E. Broadway, Webb City, Mo.

## ALLOYS (Heat Resisting)

American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio

The Babcock & Wilcox Co., 25 Liberty St., New York 6, N. Y..... 62

Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.

Electric Steel Foundry Co., 2141 N.W. 25th Ave., Portland 10, Oregon

International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.

Joseph T. Ryerson & Son, Inc., 16th and Rockwell Sts., Chicago, Ill..... 169

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y..... 129

Stoody Co., 1134 W. Slauson St., Whittier, Calif..... 48

Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

## ALLOYS (Manganese)

American Manganese Steel, Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill..... 201

Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.

The Dow Chemical Co., Midland, Mich.

Electric Steel Foundry Co., 2141 N.W. 25th Ave., Portland 10, Oregon

Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.

Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

Pettibone-Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.

Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill..... 169

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y..... 129

Stoody Co., 1134 W. Slauson St., Whittier, Calif..... 48

Stutz-Sickles Co., 134 Lafayette St., Newark 5, N. J.

Taylor-Wharton Iron & Steel Co., High Bridge, N. J..... 16

## ALTERNATORS, Electric

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Burke Electric Co., 12th & Cranberry, Erie, Penn.

Century Electric Co., 1806 Pine St., St. Louis 3, Mo.

Crocker-Wheeler Electric Mfg. Div. of Joshua Hendy Iron Works, Amper, N. J.

Electric Machinery Mfg. Co., 1336 N.E. Tyler St., Minneapolis 13, Minn.

Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

The Ideal Electric & Mfg. Co., East First & Oak, Mansfield, Ohio

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

AMMETERS (See Meters, Electric)

## ANGLEDZERS (See also Bulldozers)

The Baker Mfg. Co., 10th & Stanford Ave., Springfield, Ill.

Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio

Bucyrus-Erie Co., P. O. Box 55, South Milwaukee, Wis.

Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio

Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.

The Hell Co., 3000 W. Montana St., Milwaukee 1, Wis.

R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

## ANTI-FRICTION BEARINGS (See Bearings)

ARC WELDING APPARATUS (See also Welding Equipment, Supplies, etc.)

Air Reduction Sales Co. (Wilson Welder & Metals Co.), 60 E. 42nd St., New York, N. Y.

Allan Mfg. & Welding Co., 725 Washington St., Buffalo 3, N. Y.

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30

Hobart Bros. Co., Troy, O.

Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio

Stoody Co., 1134 W. Slauson St., Whittier, Calif..... 48

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## ASBESTOS-CEMENT BOARD

Carey Co., 1935 Easton Blvd., Cincinnati, Ohio

Johns-Manville, 22 E. 40th St., New York 16, N. Y.

Keasbey-Mattison, 1938 Mitchell St., Ambler, Penn.

The Ruberoid Co., 500 Fifth Ave., New York, N. Y.

## ASH HANDLING SYSTEMS AND EQUIPMENT

Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis..... 223

The Chase Foundry and Manufacturing Co., Columbus 7, Ohio

Gifford-Wood Co., Hudson, N. Y.

George Halas Mfg. Co., Inc., 301 Canal Pl., New York 51, N. Y.

The Jeffrey Mfg. Co., 335-39 N. 4th St., Columbus 16, Ohio..... 51

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill..... 1

Morris Machine Wks., Baldwinville, N. Y.

Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

The Neff & Fry Co., Camden, Ohio

Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Sprout, Waldron & Co., Muncy, Penn.

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill..... 8

United States Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y.

Webster Manufacturing, Inc., Tiffin, Ohio

## ASPHALT MIXING PLANTS

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill..... 175

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

The F. D. Cummer & Son Co., E. 17th & Euclid Ave., Cleveland 15, Ohio

Hetherington & Berner, Inc., 701 Kentucky Ave., Indianapolis 7, Ind.  
 Iowa Mfg. Co., 916 16th St., N. E., Cedar Rapids, Iowa 166  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.  
 The McCarter Iron Works, Inc., Mill & Washington Sts., Norristown, Penn.  
 Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. 227  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 1, Calif.  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 Universal Engineering Corp., 625 C Ave., W., Cedar Rapids, Iowa  
 Warren Brothers Roads Co., 38 Memorial Drive, Cambridge 42, Mass.  
**AUTOCLAVES, Laboratory**  
 Blaw-Knox Co., Blawnox, Penn. 245  
 Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.  
 International Engineering Inc., Belander Ave., Dayton 1, Ohio  
 Palo Myers, Inc., 81 Reade St., New York 17, N. Y.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
**AXLES**  
 The Atlas Car & Mfg. Co., 1140 Ivanhoe Rd., Cleveland, Ohio  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
 Electric Wheel Co., Quincy, Ill.  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
 W. A. Riddell Corp., Bucyrus, Ohio  
 Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
 Thornton Tandem Co., 8701 Grinnell St., Detroit 13, Mich. 206  
 Truck Engineering Corp., 1285 W. 70th St., Cleveland, Ohio  
 Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y. 247  
 The Truckstell Co., 1072 Union Commerce Bldg., Cleveland 1, Ohio.  
**SABBITT METAL**  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Groch Engineering Co., 628 W. 9th St., Los Angeles 15, Calif.  
 Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill. 1  
 Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.  
 Joseph T. Ryerson & Son Inc., 16th & Rockwell St., Chicago, Ill. 169  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
**BACKFILLERS**  
 Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis.  
 Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.  
 Bay City Shovels, Inc., Bay City, Mich.  
 Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis.  
 Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. 40  
 General Excavator Co., Cheney St., Marion, Ohio. 46  
 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
 The George Halsey Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
 Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.  
 Link-Belt Speeder Corp., 301 W. Pershing Road, Chicago 9, Ill. 189  
**BAG CLEANERS**  
 American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.  
 The Northern Blower Co., 6409 Barberton Ave., Cleveland 2, Ohio 154  
 Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
 The W. W. Sly Manufacturing Co., 4700 Train Ave., Cleveland 2, Ohio  
 Sprout, Waldron & Co., Muncy, Penn.  
**BAGGING MACHINES**  
 (See also Packing Machinery)  
 International Paper Products Div. of International Paper Co., 220 E. 42nd St., New York 17, N. Y.  
 Richardson Scale Co., Clifton, N. J.  
 St. Regis Paper Co.—Taggart Corp.—Valve Bag Co., 230 Park Ave., New York 17, N. Y. 49  
**BAGS, Dust Collector**  
 American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.  
 Bemis Bro. Bag Co., 408 Pine St., St. Louis 2, Mo. 183  
 Dracoo Corp., 4043 E. 116th St., Cleveland, Ohio  
 Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 The Northern Blower Co., 6409 Barberton Ave., Cleveland 2, Ohio 154  
 Pangborn Corp., 120 Pangborn Blvd., Hagerstown, Md.  
 Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
 The W. W. Sly Manufacturing Co., 4700 Train Ave., Cleveland 2, Ohio  
**BAGS, Paper, Cloth**  
 Bemis Bro. Bag Co., 408 Pine St., St. Louis 2, Mo. 183  
 Chase Bag Co., 309 W. Jackson Blvd., Chicago 6, Ill.  
 Fulton Bag & Cotton Mills, P. O. Box 1726, Atlanta, Ga.  
 George & Sherrard Paper Co., 220 E. 42nd St., New York 17, N. Y.  
 Hammond Bag & Paper Co., 18th & Charles Sts., Wellsburg, W. Va. 41  
 The Jaito Co., Jaito, Ohio. 78  
 The Raymond Bag Co., Midletown, Ohio  
 St. Regis Paper Co.—Taggart Corp.—Valve Bag Co., 230 Park Ave., New York 17, N. Y. 49  
 Universal Paper Bag Co., New Hope, Penn.  
**BAG TIES, Wire**  
 Bemis Bro. Bag Co., 408 Pine St., St. Louis 2, Mo. 183  
 Fulton Bag & Cotton Mills, P. O. Box 1726, Atlanta, Ga.  
 St. Regis Paper Co.—Taggart Corp.—Valve Bag Co., 230 Park Ave., New York 17, N. Y. 49  
 Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Ala.

**BALL BEARINGS**  
 Federal Bearings Co., 200 Fairview Ave., Poughkeepsie, N. Y.  
 Link-Belt Co., 519 North Holmes Ave., Indianapolis 6, Ind. 1  
 New Departure Div., General Motors Corp., Bristol, Conn.  
 Nice Ball Bearing Co., 30th & Hunting Park Ave., Philadelphia 20, Penn.  
 Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.  
 S K F Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn. 36  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
**BALL MILLS**  
 Allen Cone & Mach'y Corp., 120 Broadway, New York 5, N. Y.  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Burrell Technical Supply Co., 1936-42 Fifth Ave., Pittsburgh 19, Penn.  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
 The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
 Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.  
 Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
 The Gallagher Co., 48 South Second East St., Salt Lake City 1, Utah  
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 Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
 Nordberg Process Machinery Co., Cleveland, Ohio  
 Palo Myers, Inc., 81 Reade St., New York 17, N. Y.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
 W. A. Riddell Corp., Bucyrus, Ohio  
 F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
 Southwestern Engr. Co., 4900 Santa Fe Ave., Los Angeles 11, Calif.  
 The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.  
 Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.  
 Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. 8  
**BALLS AND SLUGS, Grinding**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Mining & Research Co., Eagle & Lawrence Rds., Oakmont, Upper Darby, Penn.  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 The Bonnot Co., Mulberry Rd. S.E., Canton, Ohio  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.

Coates Steel Products Co., Greenville, Ill.  
 Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
 Groch Engineering Co., 628 W. 9th St., Los Angeles 15, Calif.  
 Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
 Kennedy-Van Buren Mfg. & Engineering Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 The Mine & Smelter Supply Co., 1422 17th St., Denver, Colo. 24  
 National Malleable & Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
 The Patterson Foundry & Machine Co., E. Liverpool, Ohio  
 The Pennebacker Co., 4th & Furnace St., Emmaus, Penn.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd cover  
 W. A. Riddell Corp., Bucyrus, Ohio  
 S K F Industries, Inc., Front St. & Erie Ave., Philadelphia, Penn.  
 F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y. 128, 129  
 Taylor-Wharton Iron & Steel Co., High Bridge, N. J. 16  
 Traylor Engineering & Mfg. Co., Allentown, Penn. 7  
**BARGES, Sand and Gravel, etc.**  
 American Steel Dredge Co., Inc., 2511 W. Taylor St., Ft. Wayne, Ind.  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.  
 Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
 Maddox Foundry & Machine Works, Archer, Fla.  
 Manitowoc Engineering Works, Manitowoc, Wis. 35  
 Meckum Engineering Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Millville Iron Works, Inc., Sixth St. & Florence Ave., Millville, N. J.  
 Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
 Pacific Car & Foundry Co., 4th and Factory St., Renton, Wash.  
**BARREL PACKING MACHINERY**  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 10, Ohio 51  
 Sprout, Waldron & Co., Muncy, Penn.  
 Syntron Co., 480 Lexington, Homer City, Penn.  
**BATCHERS, Weighing and Volumetric**  
 Blaw-Knox Co., Blawnox, Penn. 245  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Butler Bin Co., P. O. Box 407, Waukesha, Wis. 54  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Erie Steel Const. Co., 19th & Geist Road, Erie, Penn. 204  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa 166  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 218  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 10, Ohio 51  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234



Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.  
Noble Co., 1860 7th St., Oakland 7, Calif.  
Omega Machine Co., 9 Codding St., Providence 1, R. I.  
Richardson Scale Co., Clifton, N. J.  
Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J. 244  
Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
Stearns Mfg. Co., Inc., Adrian, Mich. 208  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

**BATCHING PLANTS**

Anderson Engineering Co., 19-21 Charles St., Cambridge 41, Mass.  
Blaw-Knox Co., Blawnox, Penn. 245  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Butler Bin Co., Box 407, Waukesha, Wis. 54  
Chain Belt Co., 1600 Bruce St., Milwaukee, Wis. 223  
Construction Machinery Co., Box 338, Waterloo, Iowa  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. 204  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Hetzl Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.  
The Neff & Fry Co., Camden, Ohio  
Noble Co., 1860 7th St., Oakland 7, Calif. 229  
Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

**BATTERIES**

The Electric Storage Battery Co., 19th St. & Allegheny Ave., Pittsburgh 32, Penn.  
The Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio. 91  
National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.  
United States Rubber Co., 1250 6th Ave., New York 20, N. Y.

**BATTERY CHARGING EQUIPMENT**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Climax Engr. Co., 1810 S. 4th St., Clinton, Ia. 245  
Easton Car & Construction Co., Box 270, Easton, Penn.  
Electric Storage Battery Co., 19th St. & Allegheny Ave., Philadelphia 32, Penn.  
General Electric Co., 1 River Road, Schenectady 5, N. Y.  
Morse Bros. Machy. Co., 2900 Broadway, Denver, Colo.  
Sterling Machinery Corp., 405-13 Southwest Blvd., Kansas City, Mo.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**BEARING METALS**

Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Link-Belt Company, 2410 W. 18th St., Chicago 8, Ill. 1

Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.  
National Bearing Metal Corp., 4930 Manchester, St. Louis, Mo.  
Joseph T. Ryerson & Son Inc., 16th & Rockwell St., Chicago, Ill. 169  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**BEARINGS, Anti-Friction**

Auburn Ball Bearing Co., 28 Industrial St., Rochester, N. Y.  
Continental Gin Co., Industrial Division, 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 519 N. Holmes Ave., Indianapolis 6, Ind. 1  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. 13  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.  
Rollway Bearing Co., 541 Seymour St., Syracuse 4, N. Y.  
S K F Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
The Timken Roller Bearing Co., 1835 Duerber Ave., S.W., Canton 6, Ohio. 4  
Tyson Bearing Corp., Massillon, Ohio

**BEARINGS, Ball**

Auburn Ball Bearing Co., 28 Industrial St., Rochester, N. Y.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 519 N. Holmes Ave., Indianapolis 6, Ind. 1  
Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.  
SKF Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

**BEARINGS, Roller**

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 519 N. Holmes Ave., Indianapolis 6, Ind. 1  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.  
Rollway Bearing Co., Inc., 541 Seymour St., Syracuse 4, N. Y.  
Sanford - Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.

SKF Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn.  
The Timken Roller Bearing Co., 1835 Duerber Ave. S.W., Canton 6, Ohio. 4  
Tyson Bearing Corp., Massillon, Ohio  
Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

**BEARINGS, Thrust**

Auburn Ball Bearing Co., 28 Industrial St., Rochester, N. Y.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 519 N. Holmes Ave., Indianapolis 6, Ind. 1  
Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.  
W. A. Riddell Corp., Bucyrus, Ohio  
Rollway Bearing Co., Inc., 541 Seymour St., Syracuse 4, N. Y.  
SKF Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn.  
The Timken Roller Bearing Co., 1835 Duerber Ave., S.W., Canton 6, Ohio. 4

**BELT ALIGNERS**

The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
Chicago Belting Co., 113-125 N. Green Street, Chicago 7, Ill.  
Continental Gin Co., Industrial Division, 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Webster Mfg. Inc., Timin, O.

**BELT CONVEYORS AND ACCESSORIES**  
(See Conveyors, Belt)

**BELT CUTTERS**

Armstrong-Bray & Co., 6364 Northwest Highway, Chicago, Ill.  
Flexible Steel Lacing Co., 4607-31 Lexington St., Chicago 44, Ill. 245

**BELT DRESSING**

Chicago Belting Co., 113-125 N. Green St., Chicago 7, Ill.  
Cling-Surface Co., 1032-1048 Niagara St., Buffalo 13, N. Y.  
The B. F. Goodrich Co., Akron, Ohio 5  
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio 9  
E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Penn.  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. 13  
Rockwood Manufacturing Co., 1801 English Ave., Indianapolis, Ind.

Scandinavia Belting Co., 112 Keswick Ave., Charlotte, N. C.  
Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.  
Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill.  
Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

**BELT FASTENERS AND LACING**

Armstrong-Bray & Co., 5364 Northwest Highway, Chicago, Ill.  
Goodman Mfg. Co., 4834 S. Halsted, Chicago 9, Ill.  
Earle C. Bacon, Inc., 17 John Street, New York 7, N. Y. 244  
Bristol Co., Waterbury 91, Conn.  
Chicago Belting Co., 113-125 N. Green St., Chicago 7, Ill.  
Crescent Belt Fastener Co., 247 Park Ave., New York 17, N. Y.  
Flexible Steel Lacing Co., 4607-31 Lexington St., Chicago 44, Ill. 245  
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio 9  
E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Penn.  
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. 13  
W. O. & M. W. Talcott, Inc., 91 Sabin, Providence 1, R. I. 241  
United States Steel Supply Co., 1319 Wabasha Ave., Chicago, Ill.  
Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

**BELT PULLEYS**

Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
Chicago Belting Co., 113-125 N. Green St., Chicago 7, Ill.  
Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. 233  
The Conveyor Co., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The Dayton Rubber Mfg. Co., 2342 W. Riverview Ave., Dayton 1, Ohio  
Diamond Iron Works, Inc., and The Mahr Mfg. Co., Div., 1800 N. Second St., Minneapolis 11, Minn. 247  
Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. 166  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
Maddox Fdy. & Machine Works, Archer, Fla.  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
W. A. Riddell Corp., Bucyrus, Ohio  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.  
Standard Transmission Equip. Co., 3407 Verdugo Rd., Los Angeles 41, Calif.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Webster Mfg., Inc., Timin, Ohio  
T. B. Wood's Sons Co., 1325 Fifth Ave., Chambersburg, Penn.



# DIRECTORY

## BELT TIGHTENERS

Allis-Chalmers Mfg. Co., 1945  
Prodder St., Milwaukee 1,  
Wis.  
Chain Belt Co., 1600 W.  
Bruce St., Milwaukee, Wis. 223  
Chicago Belting Co., 113-125  
N. Green St., Chicago 7,  
Ill.  
Continental Gin Co., Indus-  
trial Division, 4500 5th  
Ave., So., Birmingham,  
Ala. 233  
Dodge Manufacturing Corp.,  
500 S. Union St., Mish-  
awaka, Ind.  
Iowa Mfg. Co., 916 16th St.,  
N. E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51  
Kent Machine Co., Cuyahoga  
Falls, Ohio 219  
Link-Belt Co., 300 W. Persh-  
ing Rd., Chicago 9, Ill. 1  
The Medart Co., 100 Potom-  
ac St., St. Louis 18, Mo.  
D. J. Murray Mfg. Co., Wau-  
sau, Wis.  
Robins Conveyors Inc., 270  
Passaic, Passaic, N. J.  
F. L. Smith & Co., 60 E.  
42nd St., New York, 17,  
N. Y. 128, 129  
Sprout, Waldron & Co.,  
Muncy, Penn.  
Universal Engineering Corp.,  
625 C Ave., W., Cedar Rap-  
ids, Iowa  
Webster Mfg., Inc., Tiffin,  
Ohio  
T. B. Wood's Sons Co., 1325  
Fifth Ave., Chambersburg,  
Penn. 13

## BELT TRIPPERS (See Con- veyor Belt Trippers)

## BELTING, Chain

American Manganese Divi-  
sion of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Chain Belt Co., 1600 W.  
Bruce St., Milwaukee, Wis. 223  
Continental Gin Co., Indus-  
trial Division, 4500 5th  
Ave., So., Birmingham, Ala. 233  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles  
11, Calif.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51  
Kensington Steel Co., 506  
Kensington Ave., Chicago  
28, Ill.  
Kent Machine Co., Cuyahoga  
Falls, Ohio 219  
Link-Belt Co., 220 So. Bel-  
mont Ave., Indianapolis 6,  
Ind.  
Lippmann Engr. Wks., 4603  
W. Mitchell St., Milwaukee  
14, Wis.  
Taylor-Wharton Iron & Steel  
Co., High Bridge, N. J. 16  
Webster Mfg., Inc., Tiffin,  
Ohio

## BELTING, Conveyor, Eleva- tor, Power Transmission

The American Rubber Mfg.  
Co., 1145 Park Ave., Oak-  
land 8, Calif.  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Boston Woven Hose & Rub-  
ber Co., 29 Hampshire St.,  
Cambridge, Mass.  
Chicago Belting Co., 113-125  
N. Green St., Chicago 7,  
Ill.  
Cincinnati Rubber Mfg. Co.,  
Franklin Ave., Norwood  
Station, Cincinnati 12, Ohio  
The Dayton Rubber Mfg.  
Co., 2342 W. Riverview  
Ave., Dayton 1, Ohio  
The Gates Rubber Co., 999 S.  
Broadway, Denver 17, Colo. 44  
L. H. Gilmer Co., Tacony,  
Philadelphia 35, Penn.  
Goodall Rubber Co., 5 S.  
36th St., Philadelphia 4,  
Penn.  
The B. F. Goodrich Co.,  
Akron, Ohio 5

The Goodyear Tire & Rubber  
Co., Inc., 1144 E. Market,  
Akron, Ohio 9  
Hewitt Rubber Corp., 240  
Kensington Ave., Buffalo 3,  
N. Y.  
The Manhattan Rubber Mfg.  
Div. of Raybestos-Manhat-  
tan, Inc., 61 Willett St.,  
Passaic, N. J. 13  
Manheim Mfg. & Belting  
Co., Manheim, Penn.  
Pioneer Rubber Mills, 353  
Sacramento St., San Fran-  
cisco 11, Calif.  
Quaker Rubber Corp., Comly  
& Milnor Sts., Philadelphia  
24, Penn. 171  
Republic Rubber Division,  
Lee Rubber & Tire Corp.,  
Youngstown 1, Ohio. 165  
Scandinavia Belting Co., 112  
Kewick Ave., Charlotte,  
N. C.  
Thermold Rubber Div. of  
Thermold Co., Whitehead  
Road, Trenton 6, N. J.  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.  
Victor Balata & Textile Belt-  
ing Co., 53 Park Pl., New  
York 7, N. Y.

## BELTING, Conveyor Repair Compound

Glover Coating Co., 376  
Washington St., Malden,  
Mass.  
The Manhattan Rubber Mfg.  
Div. of Raybestos-Manhat-  
tan, Inc., 61 Willett St.,  
Passaic, N. J. 13  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Thermold Rubber Div. of  
Thermold Co., Whitehead  
Rd., Trenton 6, N. J.

## BELTING, Metal (See Belting, Wire)

## BELTING, V-Type

Allis-Chalmers Mfg. Co., 1945  
Prodder St., Milwaukee 1,  
Wis.  
Browning Mfg. Co., Mays-  
ville, Ky.  
Chicago Belting Co., 113-125  
N. Green Street, Chicago  
7, Ill.  
The Cincinnati Rubber Mfg.  
Co., Franklin Ave. & Nor-  
wood Station, Cincinnati  
12, Ohio 222  
Continental Gin Co., Indus-  
trial Division, 4500 5th  
Ave., So., Birmingham,  
Ala. 233  
The Dayton Rubber Mfg.  
Co., 2342 W. Riverview  
Ave., Dayton 1, Ohio  
The Gates Rubber Co., 999  
S. Broadway, Denver 17,  
Colo. 44  
L. H. Gilmer Co., Tacony,  
Philadelphia 35, Penn.  
Goodall Rubber Co., 5 S. 36th  
St., Philadelphia 4, Penn.  
The B. F. Goodrich Co., Ak-  
ron, Ohio 5  
The Goodyear Tire & Rubber  
Co., Inc., 1144 E. Market,  
Akron, Ohio 9  
The Manhattan Rubber Mfg.  
Div. of Raybestos-Manhat-  
tan, Inc., 61 Willett St., Pas-  
saic, N. J. 13  
Manheim Mfg. & Belting Co.,  
Manheim, Penn.  
Republic Rubber Division,  
Lee Rubber & Tire Corp.,  
Youngstown 1, Ohio. 165  
Rockwood Mfg. Co., 1801  
English Ave., Indianapolis,  
Ind.  
Thermold Rubber Div. of  
Thermold Co., Whitehead  
Road, Trenton 6, N. J.  
United States Rubber Co.,  
1230 6th Ave., New York 20,  
N. Y.

## BELTING, Wire

Audubon Wire Cloth Corp.  
(Subsidiary of Manganese  
Steel Forge Co.), Richmond  
St. & Castor Ave., Phila-  
delphia, Penn.

Cyclone Fence Div., Ameri-  
can Steel & Wire Co.,  
Waukegan, Ill.  
L. H. Gilmer Co., Tacony,  
Philadelphia 35, Penn.  
Kent Machine Co., Cuyahoga  
Falls, Ohio

## BELTS, Fan

Chicago Belting Co., 113-125  
N. Green St., Chicago 7,  
Ill.  
Continental Rubber Works,  
1902 Liberty St., Erie,  
Penn.  
The Dayton Rubber Mfg.  
Co., 342 W. Riverview  
Ave., Dayton 1, Ohio  
The Firestone Tire & Rub-  
ber Co., 1200 Firestone  
Parkway, Akron 17, Ohio. 91  
The Gates Rubber Co., 999 S.  
Broadway, Denver 17,  
Colo. 44  
L. H. Gilmer Co., Tacony,  
Philadelphia 35, Penn.  
The B. F. Goodrich Com-  
pany, Akron, Ohio. 5  
The Goodyear Tire & Rubber  
Company, Inc., 1144 E.  
Market, Akron, Ohio. 9  
The Manhattan Rubber Mfg.  
Div. of Raybestos-Manhat-  
tan, Inc., 61 Willett St.,  
Passaic, N. J. 13  
Quaker Rubber Corp., Comly  
& Milnor Sts., Philadel-  
phia 24, Penn.  
Raybestos Div. of Raybestos-  
Manhattan, Inc., P.O. Box  
1021, Bridgeport 2, Conn.  
Thermold Rubber Div. of  
Thermold Co., Whitehead  
Road, Trenton 6, N. J.

## BENDING ROLLS for Reinforcing Steel

Buffalo Forge Co., P.O. Box  
995, Buffalo 5, N. Y.  
Quinn Wire & Iron Works,  
Boone, Iowa

## BIN GATES

Alpha Tank & Sheet Metal  
Mfg. Co., 5001 S. 39th St.,  
St. Louis 16, Mo.  
Anchor Concrete Machinery  
Co., 1191 Fairview Ave.,  
Columbus 8, Ohio. 218  
Anderson Engineering Co.,  
19-21 Charles St., Cam-  
bridge 41, Mass.  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
The C. O. Bartlett & Snow  
Co., 6194 Harvard Ave.,  
Cleveland, Ohio  
Blaw-Knox Co., Blawnox,  
Penn. 248  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
22, Calif.  
Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
Chain Belt Co., 1600 W.  
Bruce St., Milwaukee, Wis. 223  
Cement Mill Equipment Co.,  
9718 Otsego Ave., Detroit,  
Mich.  
Continental Gin Co., Indus-  
trial Div., 4500 5th Ave.  
So., Birmingham, Ala. 233  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles  
11, Calif.  
Diamond Iron Works, Inc.,  
and The Mahr Mfg. Co.  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn. 247  
The Ducon Co., 259 Norman  
Ave., Brooklyn 22, N. Y.  
Erie Steel Construction Co.,  
19th & Geist Road, Erie,  
Penn. 204  
Fuller Co., Fuller Bldg.,  
Catasauqua, Penn. 14, 15  
Garlinghouse Bros., 2416 E.  
16th St., Los Angeles 21,  
Calif.  
Greenville Mfg. Works,  
Greenville, Ohio  
Gruendler Crusher & Pulver-  
izer Co., 2915-17 N. Market  
St., St. Louis, Mo. 177  
George Halse Mfg. Co., Inc.,  
31 Canal Pl., New York  
51, N. Y.  
Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235

Heitzel Steel Form & Iron  
Co., 1750 Thomas Rd.,  
Warren, Ohio

Iowa Mfg. Co., 916 16th St.,  
N. E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Kennedy-Van Saun Mfg. &  
Engineering Corp., 2 Park  
Ave. Bldg., New York,  
N. Y. 10, 11  
Fred T. Kern Co., Box 2057,  
Milwaukee 1, Wis.  
Lewistown Foundry & Ma-  
chine Co., 16 Elizabeth,  
Lewistown, Penn.  
Link-Belt Co., 300 W. Persh-  
ing Rd., Chicago 9, Ill. 1  
Maddox Foundry & Machine  
Works, Archer, Fla.  
Maden Iron Wks., 5631 Bick-  
ett St., Huntington Park,  
Calif.  
McGann Mfg. Co., P. O. Box  
1187, York, Penn. 173  
McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 48  
Morrow Mfg. Co., 722 E.  
10th St., Wellston, Ohio  
D. J. Murray Mfg. Co., Wau-  
sau, Wis.  
National Steel Products Co.,  
1611 Crystal Ave., Kansas  
City 3, Mo.  
The Neff & Fry Co., Camden,  
Ohio  
New Holland Machine Co.,  
100 Franklin St., New Hol-  
land, Penn. 226  
Omega Machine Co., 9 Cod-  
ding St., Providence 1,  
R. I.  
Pacific Car & Fdy. Co., 4th  
and Factory St., Renton,  
Wash.  
Pioneer Engineering Wks.,  
Inc., 1515 Central Ave.,  
Minneapolis 13, Minn. 227  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Smith Engineering Wks., 532  
E. Capitol Dr., Milwaukee  
12, Wis. 56  
Sprout, Waldron & Co.,  
Muncy, Penn.  
Standard Steel Corp., 5001  
Boyle St., Los Angeles 11,  
Calif.  
Stearns Mfg. Co., Inc.,  
Adrian, Mich. 208  
Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6  
Straub Mfg. Co., 507 Chest-  
nut, Oakland 7, Calif.  
Traylor Engineering & Man-  
ufacturing Co., Allentown,  
Penn. 7  
Universal Road Mch. Co.,  
27 Emerick St., Kingston,  
N. Y. 230  
Webster Mfg., Inc., Tiffin,  
Ohio  
Webster Mch. Co., 760 Fol-  
som St., San Francisco,  
Calif.

## BIN LEVEL INDICATORS

The Babcock & Wilcox Co.,  
85 Liberty Street, New  
York 6, N. Y. 62  
The Bin-Dicator Co., 14615 E.  
Jefferson Ave., Detroit 15,  
Mich.  
Blaw-Knox Co., Blawnox,  
Penn. 245  
The Ducon Co., 259 Norman  
Ave., Brooklyn 22, N. Y.  
Fuller Co., Fuller Bldg., Ca-  
tasauqua, Penn. 14, 15  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Mosher Electronic Controls,  
130 W. 42nd St., New York  
18, N. Y.  
National Steel Products Co.,  
1611 Crystal Ave., Kansas  
City 3, Mo.  
Photoswitch Inc., 77 Broad-  
way, Cambridge 42, Mass.  
Standard Steel Corp., 5001  
So. Boyle Ave., Los An-  
geles 11, Calif.



# DIRECTORY

Multiplex Concrete Mch.  
Co., Elmore, Ohio..... 217  
Stearns Mfg. Co., Inc.,  
Adrian, Mich..... 208

**BLOCK MACHINES, Concrete**  
Building, Other Types  
Anchor Concrete Mch. Co.,  
1191 Fairview Ave., Colum-  
bus 8, Ohio..... 218  
Bay City Cast Stone Block  
Mch. Co., Bay City, Mich.  
Besser Mfg. Co., Alpena,  
Mich..... 211  
Concrete Pipe Mch. Co., 9th  
& Division St., Sioux City,  
Iowa

Jackson & Church Co., 321  
N. Hamilton St., Saginaw,  
Mich..... 216  
Kent Machine Co., Cuyahoga  
Falls, Ohio..... 232

Maddox Foundry & Machine  
Works, Archer, Fla.  
Miles Mfg. Co., 545-7 Hupp  
Ave., Jackson, Mich.

Mortars Tile Machine Co.,  
Inc., 2623 Riverside Drive,  
Los Angeles 26, Calif.  
Multiplex Concrete Mch.  
Co., Elmore, Ohio..... 217

Stearns Mfg. Co., Inc.,  
Adrian, Mich..... 208

**BLOCK MACHINES, Con-  
crete, Catch Basins (See**  
Catch Basin Block Ma-  
chinery and Molds)

**BLOCK MACHINES, Con-  
crete, Flue**

Anchor Concrete Machinery  
Co., 1191 Fairview Ave.,  
Columbus 8, Ohio..... 218

Besser Mfg. Co., Alpena,  
Mich..... 211  
Kent Machine Co., Cuyahoga  
Falls, Ohio..... 219

Multiplex Concrete Mch.  
Co., Elmore, Ohio..... 217  
Stearns Mfg. Co., Inc.,  
Adrian, Mich..... 208

**BLOCK MACHINES, Con-  
crete, Man-Hole**

Anchor Concrete Machinery  
Co., 1191 Fairview Ave.,  
Columbus 8, Ohio..... 218

Besser Mfg. Co., Alpena,  
Mich..... 211  
Concrete Transport Mixer  
Co., 650 Rosedale Ave.,  
St. Louis 12, Mo..... 219

Kent Machine Co., Cuyahoga  
Falls, Ohio..... 219  
Multiplex Concrete Mch.  
Co., Elmore, Ohio..... 217

Stearns Mfg. Co., Inc.,  
Adrian, Mich..... 208

**BLOCKS, Pillow, Ball and**  
Roller Bearing

Allis-Chalmers Mfg. Co., 1945  
Prodor St., Milwaukee 1,  
Wis.

Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
24, Calif.

Chain Belt Co., 1600 W.  
Bruce St., Milwaukee, Wis. 223

Clyde Iron Works, Inc., 29th  
Ave. W. & Michigan St.,  
Duluth 1, Minn.

Continental Gln Co., Indus-  
trial Division, 4500 5th  
Ave., So., Birmingham,  
Ala..... 233

The Conveyor Co., Inc., 3200  
E. Slauson Ave., Los An-  
geles 11, Calif.

Diamond Iron Works, Inc.  
and The Mahr Mfg. Co.  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn..... 247

Dobbie Foundry & Machine  
Co., 146-170 Portage Rd.,  
Niagara Falls, N. Y.

Dodge Manufacturing Corp.,  
500 S. Union St., Misha-  
waka, Ind.

French & Hecht, Inc., Daven-  
port, Iowa

Greenville Mfg. Works,  
Greenville, Ohio

The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 18,  
Ohio..... 51

W. A. Jones Fdy. & Ma-  
chine Co., 4401 Roosevelt  
Rd., Chicago 24, Ill..... 26

Kent Machine Co., Cuyahoga  
Falls, Ohio..... 219

Link-Belt Co., 519 North  
Holmes Ave., Indianapolis  
6, Ind..... 1

Meckum Engineering, Inc.,  
53 W. Jackson Blvd., Chi-  
cago 4, Ill.

The Medart Co., 100 Potomac  
St., St. Louis 18, Mo.  
Morrow Mfg. Co., 722 E.  
Tenth St., Wellston, Ohio

Norma-Hoffmann Bearings  
Corp., Hamilton Ave.,  
Stamford, Conn.

W. A. Riddell Corp., Bucy-  
rus, Ohio

Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
S K F Industries, Inc., Front  
St. & Erie Ave., Philadel-  
phia 34, Penn.

Sprout, Waldron & Co.,  
Muncy, Penn.

Stephens-Adams Mfg. Co.,  
11 Ridgeway Ave., Aurora,  
Ill.

Webster Manufacturing, Inc.,  
Tiffin, Ohio

Wisconsin Fdry. & Machine  
Co., 623 E. Main, Madison  
1, Wis.

T. B. Wood's Sons Co., 1325  
Fifth Ave., Chambersburg,  
Penn.

**BLOCKS, Refractory**  
(See also Refractories)

The Babcock & Wilcox Co.,  
85 Liberty Street, New  
York 6, N. Y.

The Carborundum Co., P.O.  
Box 337, Niagara Falls,  
N. Y.

General Refractories Co., 1800  
Real Estate Trust Bldg.,  
Philadelphia, Penn.

A. P. Green Fire Brick Co.,  
Mexico, Mo.

Harblson-Walker Refractory  
Co., Farmers Bank  
Bldg., Pittsburgh, Penn.

Johns-Manville, 22 E. 40th  
St., New York 16, N. Y.

Laclede-Christy Clay Prod-  
ucts Co., Ambassador  
Bldg., St. Louis 1, Mo.

Mexico Refractories Co., Cole  
& Love St., Mexico, Mo.

National Carbon Co., Inc.,  
30 E. 42nd St., New York  
17, N. Y.

Quigley Co., Inc., 527 Fifth  
Ave., New York 17, N. Y.

Refractory & Insulation  
Corp., 120 Wall St., New  
York 5, N. Y.

Stockton Fire Brick Co., 1267  
Russ Building, 235 Mont-  
gomery Street, San Fran-  
cisco, Calif.

Walsh Refractories Corp.,  
4070 North First St., St.  
Louis 7, Mo.

**BLOCKS, Sheave and Chain**

American Holst & Derrick  
Co., 63 S. Robert St., St.  
Paul 1, Minn.

American Manganese Steel  
Division of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill..... 201

Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y..... 244

Columbus McKinnon Chain  
Corp., Tonawanda, N. Y.

Dobbie Fdy. & Machine Co.,  
146-170 Portage Rd., Niag-  
ara Falls, N. Y.

Dodge Mfg. Corp., 500 S.  
Union St., Mishawaka,  
Ind.

Electric Steel Fdry Co., 2141  
N.W. 25th Ave., Portland  
10, Oregon

Ford Chain Block Div.,  
American Chain & Cable  
Co., 2nd and Diamond Sts.,  
Philadelphia 25, Penn.

Meckum Engr. Inc., 53 W.  
Jackson Blvd., Chicago,  
Ill.

Webster Mfg. Inc., Tiffin,  
Ohio

Wisconsin Fdry. & Machine  
Co., 623 E. Main, Madison  
1, Wis.

Wright Mfg. Div., American  
Chain & Cable Co., York,  
Penn.

**BLOWERS (See Fans and**  
Blowers)

**BLOW TORCHES, Heaters,**  
Thawing Outfits for Fro-  
zen Aggregates

Diamond Iron Wks., Inc.,  
The Mahr Mfg. Co. Div.,  
1800 N. 2nd St., Minneap-  
olis 11, Minn..... 247

Macleod Co., 2232-40 Bogen  
St., Cincinnati, Ohio

Wisconsin Fdry. & Machine  
Co., 623 E. Main, Madison  
1, Wis.

**BOATS, Derrick, Tow**

American Steel Dredge Co.,  
Inc., 2511 W. Taylor St.,  
St. Wayne, Ind.

Bethlehem Steel Co., Bethle-  
hem, Penn.

Drawo Corp., Neville Island,  
Pittsburgh 25, Penn.

Manitowoc Engr. Wks., Man-  
itowoc, Wis..... 35

Meckum Engr. Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.

Millville Iron Wks., Inc.,  
Sixth St. & Florence Ave.,  
Millville, N. J.

Pacific Car & Fdry Co., 4th  
and Factory St., Renton,  
Wash.

**BOATS, Self-Unloading**

Manitowoc Engr. Wks., Man-  
itowoc, Wis..... 35

Meckum Engr. Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.

Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.

Drawo Corp., Neville Island,  
Pittsburgh 25, Penn.

Manitowoc Engr. Wks., Man-  
itowoc, Wis..... 35

Meckum Engr. Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.

Pacific Car & Fdry Co., 4th  
& Factory St., Renton,  
Wash.

**BODIES, Concrete Mixer**  
Truck

Blaw-Knox Co., Blawnox,  
Penn..... 245

Chain Belt Co., 1660 W. Bruce  
St., Milwaukee, Wis..... 223

Commercial Concrete Equip.  
Co., 1 Wolf's Lane, Pel-  
ham 65, N. Y.

Concrete Transport Mixer  
Co., Inc., 650 Rosedale  
Ave., St. Louis, Mo..... 219

Consarco, Inc., 1600 S. Cap-  
itol St., Washington 3, D.C.

Jaeger Machine Co., 550 W.  
Spring St., Columbus, Ohio

Ransome Machinery Co.,  
Dunellen, N. J.

T. L. Smith Co., 2835 N. 32nd  
St., Milwaukee, Wis..... 185

Spears-Wells Machy. Co.,  
Inc., 1832 W. 9th St., Oak-  
land 7, Calif.

**BODIES, Dump, Dump**  
Truck

Anthony Co., Inc., Streater,  
Ill.

The Hell Co., 3000 W. Mon-  
tana St., Milwaukee 1,  
Wis.

Hercules Steel Products Co.,  
Sherman St., Gallon, Ohio

The Hug Co., 6th St., High-  
land, Ill.

Mack Trucks Inc., 350 Fifth  
Ave., New York 1, N. Y.

Marion Metal Products Co.,  
413 Monroe, Marion, Ohio

National Steel Products Co.,  
1611 Crystal Ave., Kansas  
City 3, Mo.

The Perfection Steel Body  
Co., Gallon, Ohio

Superior Metal Products Co.,  
1819 S. Branson St., Mari-  
on, Ind.

Truck Engr. Corp., 1285 W.  
70th St., Cleveland 2, Ohio

Truck Equipment Co., Inc.,  
1791 Fillmore Ave., Buf-  
falo, N. Y..... 247

**BODIES, Trailer**

Anthony Co., Inc., Streater,  
Ill.

Easton Car & Construction  
Co., Box 270, Easton, Penn.

Fruehauf Trailer Co., 10940  
Harper Ave., Detroit, Mich.

Gallon Allsteel Body Co., 605  
S. Market St., Gallon, Ohio

Gar Wood Industries, Inc.  
7924 Riopelle St., Detroit  
11, Mich.

The Hell Co., 3000 W. Mon-  
tana, Milwaukee, Wis.

Hercules Steel Products Co.,  
Sherman St., Gallon, Ohio

Mack Trucks, Inc., 350 Fifth  
Ave., New York 1, N. Y.

Marion Metal Products Co.,  
413 Monroe, Marion, Ohio

The Perfection Steel Body  
Co., Gallon, Ohio

A. Streich & Bro. Co., 318  
Eighth St., Oshkosh, Wis.

The Trailer Company of Am-  
erica, 31st & Robertson  
Ave., Cincinnati, Ohio

Truck Engr. Corp., 1285 W.  
70th St., Cleveland 2,  
Ohio

**BOILER ACCESSORIES**

The Babcock & Wilcox Co.,  
85 Liberty St., New York  
6, N. Y..... 62

Bailey Meter Co., 1050 Ivan-  
hoe Rd., Cleveland, Ohio

Turco Products Inc., 6135 S.  
Central Ave., Los Angeles  
1, Calif.

Wickwire Spencer Steel Co.,  
500 Fifth Ave., New York  
18, N. Y.

**BOILER FEED WATER**  
SYSTEMS

Allis-Chalmers Mfg. Co., 1945  
Prodor St., Milwaukee 1,  
Wis. (Feedwater Treatment  
Service)

Bailey Meter Co., 1050 Ivan-  
hoe Rd., Cleveland, Ohio

The Dorr Co., 570 Lexington  
Ave., New York 22, N. Y..... 183

Photoswitch Inc., 77 Broad-  
way, Cambridge 42, Mass.

Worthington Pump & Ma-  
chinery Corp., 744 Broad  
St., Newark 2, N. J.

**BOILER INSULATION**

A. P. Green Fire Brick Co.,  
1018 E. Breckenridge, Mex-  
ico, Mo.



## BOILER PLATE AND STEEL

Bethlehem Steel Co., Bethlehem, Penn. 22  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 19, Penn.  
Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
Republic Steel Co., Republic Bldg., Cleveland, Ohio  
Joseph T. Ryerson & Son Inc., 16th & Rockwell St., Chicago, Ill. 169  
Superior Metal Products Inc., 1819 S. Branson St., Marion, Ind.  
Tennessee Coal, Iron & Railroad Co., Brown Marx Bldg., Birmingham 2, Alabama  
United States Steel Supply Co., 1319 Wabasha Ave., Chicago, Ill.

## BOILER TUBES

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Bethlehem Steel Co., Inc., Bethlehem, Penn. 22  
National Tube Co., Frick Building, Pittsburgh, Penn.  
Pittsburgh Steel Co., Grant Bldg., Pittsburgh 30, Penn.  
Republic Steel Co., Republic Bldg., Cleveland, Ohio  
Joseph T. Ryerson & Son Inc., 16th & Rockwell St., Chicago, Ill. 169

## BOILERS

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Combustion Eng. Corp., 1315 N. Branch St., Chicago, Ill. 18, 19  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
McDermott Bros. Co., Ft. of Washington St., Allentown, Penn.  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.  
Struthers Wells Corp., 1003 Pennsylvania Ave., West, Warren, Penn.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
The Wickes Boiler Co., 515 W. Washington Ave., Saginaw, Mich.

## BOILERS, Waste Heat

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
McDermott Bros. Co., Ft. of Washington St., Allentown, Penn.  
Struthers Wells Corp., 1003 Pennsylvania Ave., West, Warren, Penn.  
Southwestern Engineering Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
The Wickes Boiler Co., 515 W. Washington Ave., Saginaw, Mich.

## BOOSTERS, Voltage, Motor

Generator (see Electrical Equipment)

## BOOTS, Rubber (see Safety Equipment)

## BRAKE LINING

The Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio. 91  
Gatke Corp., 228 N. La Salle St., Chicago 1, Ill.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. 13  
The Raybestos Div. of Raybestos-Manhattan, Inc., P. O. Box 1021, Bridgeport 2, Conn.  
Scandinavia Belting Co., 112 Keswick Ave., Charlotte, N. C.

Southern Friction Materials Co., P. O. Box 1475, Charlotte 1, N. C.  
Thermold Rubber Div. of Thermold Co., Whitehead Road, Trenton 6, N. J.  
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.

## BRAKES, Clutch, Hydraulic, Magnetic

Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio  
General Electric Co., 1 River Road, Schenectady 5, N. Y.  
Pacific Car & Foundry Co., 4th and Factory St., Renton, Wash.  
Stearns Magnetic Mfg. Co., 675 S. 28th St., Milwaukee 4, Wis.  
Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo. (Hydraulic)  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## BREAKERS (See Circuit Breakers)

## BRICK, Refractory, Fire, Acid-Proof, Insulating (see also Refractories, Fire Brick)

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.  
A. P. Green Fire Brick Co., Mexico, Mo.  
Harbison-Walker Refractories Co., 1800 Farmers Bank Building, Pittsburgh 22, Penn.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
E. J. Lavino & Co., 1528 Walnut St., Philadelphia 2, Penn.  
Mexico Refractories Co., Cole & Love St., Mexico, Mo.  
National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.  
Permanente Cement Co., Latham Square Bldg., Oakland 12, Calif.  
Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Stockton Fire Brick Co., 1267 Russ Building, 235 Montgomery Street, San Francisco, Calif.  
Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.  
Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

## BRICK MACHINES AND MOLDS, Concrete, Sand-Lime

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
Besser Mfg. Co., Alpena, Mich. 211  
W. E. Dunn Mfg. Co., 23 W. 24th St., Holland, Mich.  
Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
Miles Mfg. Co., 5457 Hupp Ave., Jackson, Mich.  
Multiplex Concrete Mch. Co., Elmore, Ohio 217  
W. A. Riddell Corp., Bucyrus, Ohio  
Stearns Mfg. Co., Inc., Adrian, Mich. 208

## BRIDGES, Material Handling

Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
Industrial Brownhoist Corp., 135 Washington, Bay City, Mich. 230

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Pacific Car & Foundry Co., 4th & Factory Sts., Renton, Wash.  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231  
Wickwire Spencer Steel Co., 500 Fifth Ave., New York 15, N. Y.

## BRIQUETTE MOLDS (See Laboratory Equipment)

## BUCKET LOADERS

(See also Loaders, Trucks)  
Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.  
Barber-Green Co., 631 W. Park Ave., Aurora, Ill. 175  
Besser Mfg. Co., Alpena, Mich. 211  
Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. 242  
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Eagle Crusher Co., Inc., 900 Harding Way East, Gallon, Ohio 25  
Elmco Corp., P. O. Box 300, Salt Lake City 5, Utah  
George Halss Mfg. Co., 391 Canal Pl., New York 51, N. Y.  
Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
The Jeffrey Mfg. Co., 935-99 4th St., Columbus 16, Ohio 51  
Link-Belt Co., 2045 West Hunting Park Ave., Philadelphia 40, Penn. 1  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
N. F. Nelson Iron Works, Inc., 820 Bloomfield Ave., Clinton, N. J.  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231

## BUCKET PARTS

American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Auburn Wire Cloth Corp., (Subsidiary of Manganese Steel Forge Co.) Richmond St. & Castor Avenue, Philadelphia, Penn.  
Blaw-Knox Co., Blawnox, Penn. 245  
Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. 4th cover  
Chalm Belt Co., 1660 W. Bruce St., Milwaukee, Wis. 223  
Erie Steel Construction Co., Box 1031, Erie, Penn. 204  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243  
George Halss Mfg. Co., 391 Canal Pl., New York 51, N. Y.  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
The Owen Bucket Co., 6001 Breakwater Ave., Cleveland 2, Ohio 236  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 16  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231

## BUCKETS, Clamshell, Grab and Orange Peel

Blaw-Knox Co., Blawnox, Penn. 245  
Electric Steel Fdy. Co., 2141 N.W. 25th Ave., Portland 10, Oregon  
Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. 204  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243  
George Halss Mfg. Co., Inc., 391 Canal St., New York 51, N. Y.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
The Hayward Co., 50 Church St., New York 7, N. Y. 243  
Industrial Brownhoist Corp., 135 Washington, Bay City, Mich. 230  
C. S. Johnson Co., Box 71, Champaign, Ill. 234  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Joseph F. Kiesler Co., 938 W. Huron St., Chicago, Ill.  
Manitowoc Engr. Works, Manitowoc, Wis. 35  
Orton Crane & Shovel Co., 608 S. Dearborn St., Chicago, Ill.  
The Owen Bucket Co., 6001 Breakwater Ave., Cleveland 2, Ohio 236  
Pettibone Mulliken Corp., 4720 W. Division, Chicago, Ill.  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231  
Western Mch. Co., 760 Folsom St., San Francisco, Calif.

## BUCKETS, Dragline and Slackline

American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Bay City Shovels, Inc., 2611 Center Avenue, Bay City, Mich.  
Blaw-Knox Co., Blawnox, Penn. 245  
Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. 4th cover  
De Soto Foundry, Inc., Hendrix Bucket Dept., Mansfield, La.  
Electric Steel Fdy. Co., 2141 N.W. 25th Ave., Portland 10, Oregon  
Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. 204  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243  
Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
Hanson Clutch & Machine Co., Tiffin, Ohio  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Hayward Co., 50 Church St., New York, N. Y. 243  
Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189  
Owen Bucket Co., 6001 Breakwater Ave., Cleveland, Ohio 236  
Page Engineering Co., Clearing P. O., Chicago, Ill.  
"Quick-Way" Truck Shovel Co., P. O. Box 1800, Denver, Colo.  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Sauerman Bros., Inc., 530 S. Clinton St., Chicago 7, Ill. 230  
Street Brothers Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.



# DIRECTORY

Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 16  
 Traylor Engr. & Mfg. Co., Allentown, Penn. .... 7  
 Wellman Engineering Co., 7000 Central Ave., Cleveland 4, Ohio. .... 231  
 Wisconsin Fdry. & Machine Co., 623 E. Main, Madison 1, Wis. ....

**BUCKETS, Dredge and Excavator**  
 American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
 American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind. ....  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
 Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. .... 4th cover  
 Electric Steel Fdy. Co., 2141 N.W. 25th Ave., Portland 10, Ore. ....  
 Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. .... 204  
 The Frog, Switch & Mfg. Co., Carlisle, Penn. .... 243  
 George Halsz Mfg. Co., 391 Canal Pl., New York 51, N. Y. ....  
 The Hayward Co., 50 Chuch St., New York 7, N. Y. .... 243  
 Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore. ....  
 Kensington Steel Co., 506 Kensington Ave., Chicago 28, Ill. ....  
 Jos. F. Klesler Co., 938 W. Huron St., Chicago, Ill. ....  
 Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind. .... 1  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill. ....  
 The Osgood Co., Marion, Ohio  
 The Owen Bucket Co., 6001 Breakwater Ave., Cleveland 2, Ohio. .... 236  
 Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 16  
 Wellman Engineering Co., 7000 Central Ave., Cleveland 4, Ohio. .... 231

**BUCKETS, Elevator**  
 Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo. ....  
 American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 207  
 Earle C. Bacon, Inc., 17 John Street, New York 7, N. Y. .... 244  
 The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
 Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn. ....  
 Besser Mfg. Co., Alpena, Mich. .... 211  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif. ....  
 L. Burmeister Co., 3225 W. Burnham St., Milwaukee 4, Wis. ....  
 Chain Belt Company, 1660 W. Bruce St., Milwaukee 4, Wis. .... 223  
 Chicago Perforating Co., 2445 W. 24th Pl., Chicago, Ill. .... 218  
 Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill. ....  
 The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio  
 Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. .... 233  
 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif. ....  
 Diamond Iron Works, Inc. and The Mahr Mfg. Co., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247

Eagle Crusher Co., Inc., 900 Harding Way East, Galion, Ohio. .... 25  
 Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. .... 204  
 Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio  
 The Frog, Switch & Mfg. Co., Carlisle, Penn. .... 243  
 Greenville Mfg. Works, Greenville, Ohio  
 Gruendler Crusher & Pulverizer Co., 2015-17 N. Market St., St. Louis, Mo. .... 177  
 George Halsz Mfg. Co., 391 Canal Pl., New York 51, N. Y. ....  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. ....  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. .... 166  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. .... 234  
 Kennedy-Van Saun Mfg. & Engr. Corp., 2 Park Ave. Bldg., New York, N. Y. .... 10, 11  
 Lewistown Fdry. & Mach. Co., Lewistown, Penn. ....  
 Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind. .... 1  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
 Maddox Foundry & Machine Works, Archer, Fla.  
 Madson Iron Wks. 5631 Bickett St., Huntington Park, Calif.  
 Manganese Steel Forge Co., Richmond & Castor Ave., Philadelphia, Penn.  
 Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
 D. J. Murray Mfg. Co., Wausau, Wis.  
 National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 N. P. Nelson Iron Works, Inc., 820 Bloomfield Ave., Clifton, N. J.  
 New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226  
 Omega Machine Co., 9 Codding St., Providence 1, R. I.  
 Pettibone-Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227  
 Robins Conveyors Inc., 270 Passaic, Passaic, N. J.  
 Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. .... 200  
 Screw Conveyor Corp., 700 Hoffman St., Hammond, Ind.  
 Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56  
 The Standard Metal Mfg. Co., Malinta, Ohio .... 239  
 Sprout, Waldron & Co., Muncy, Penn. ....  
 Stephens-Adamson Mfg., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 16  
 Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7  
 Universal Engr. Corp., 625 C Ave., W., Cedar Rapids, Iowa  
 Universal Road Mch. Co., 27 Emerick St., Kingston, N. Y. .... 239  
 Webster Mfg. Inc., Tiffin, Ohio  
 Western Machy. Co., 760 Folsom St., San Francisco, Calif.  
 Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. .... 29

Wisconsin Fdry. & Machine Co., 623 E. Main, Madison 1, Wis. ....

**BUCKETS, Tramway**  
 Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis, Mo.  
 The Chase Fdry. & Mfg. Co., Columbus 7, Ohio  
 The Cleveland Crane & Engr. Co., 1109 East 283rd St., Wickliffe, Ohio  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. .... 234

**BUGGIES, Concrete**  
 Construction Machinery Co., Glenwood & Vinton St., Waterloo, Iowa  
 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
 D. J. Murray Mfg. Co., Wausau, Wis.

**BUILDING, Block, Tile Machines**  
 Anchor Concrete Mch. Co., 1191 Fairview Ave., Columbus 8, Ohio. .... 216  
 Besser Mfg. Co., Alpena, Mich. .... 211  
 Concrete Transport Mixer Co., Inc., 650 Rosedale Ave., St. Louis 12, Mo. .... 219  
 W. E. Dunn Mfg. Co., Holland, Mich.  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. .... 215  
 Kent Machine Co., Cuyahoga Falls, Ohio .... 219  
 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
 Multiplex Concrete Machinery Co., Elmore, Ohio. .... 217  
 Stearns Mfg. Co., Inc., Adrian, Mich. .... 208

**BUILDINGS, Industrial, all Steel**  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 Henry J. Kaiser Co., Latham Square Bldg., Oakland 12, Calif.  
 F. T. Kern Co., Box 2057, Milwaukee 1, Wis.  
 Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
 Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
 Pacific Car & Fdry. Co., 4th and Factory St., Renton, Wash.  
 Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Alabama  
 Truscon Steel Co., Albert St., Youngstown, Ohio

**BULK CEMENT HANDLING EQUIPMENT**  
 Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn. ....  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif. ....  
 Butler Bin Co., Box 407, Waukesha, Wis. .... 54  
 Chain Belt Co., 1660 W. Bruce St., Milwaukee 4, Wis. .... 223  
 The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio  
 Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. .... 233  
 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. .... 204

Fuller Co., Fuller Bldg., Cataasquig, Penn. .... 14, 15  
 Heltzel Steel Form & Iron Co., 1780 Thomas Rd., Warren, Ohio  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. .... 234  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
 Lippmann Engr. Wks., 4603 W. Mitchell, Milwaukee 14, Wis.  
 Madson Iron Works, 5631 Bickett St., Huntington Park, Calif.  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Screw Conveyor Corp., 700 Hoffman St., Hammond, Ind.  
 F. L. Smith & Co., 50 E. 42nd St., New York 17, N. Y. .... 129, 129  
 Sprout, Waldron & Co., Muncy, Penn.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6

**BULK CEMENT STORAGE PLANTS**  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Butler Bin Co., Box 407, Waukesha, Wis. .... 54  
 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. .... 204  
 Heltzel Steel Form & Iron Co., 1780 Thomas Rd., Warren, Ohio  
 C. S. Johnson Co., P.O. Box 71, Champaign, Ill. .... 234  
 Henry J. Kaiser Co., Latham Square Bldg., Oakland 12, Calif.  
 Madson Iron Works, 5631 Bickett St., Huntington Park, Calif.  
 The Neff & Fry Co., Camden, Ohio  
 The Nicholson Co., 10 Rockefeller Plaza, New York 20, N. Y.  
 Standard Steel Corp., 5001 Boyie St., Los Angeles 11, Calif.

**BULLDOZERS (Also See Angledozers)**  
 Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis. .... 24  
 Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.  
 Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. .... 53  
 The Baker Mfg. Co., 10th & Stanford, Springfield, Ill.  
 Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
 Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. .... 4th cover  
 Caterpillar Tractor Co., Peoria 8, Ill.  
 Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio  
 Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.  
 The Heli Co., 3000 W. Montana St., Milwaukee 1, Wis.  
 Hi-Way Service Corp., 3857 W. Wisconsin Ave., Milwaukee 8, Wis.  
 Frank G. Hough Co., Libertyville, Ill.  
 LaPlant-Choate Mfg. Co., Inc., Cedar Rapids, Iowa  
 R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.  
 Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
 Pacific Car & Fdry. Co., 4th and Factory St., Renton, Wash.

## BURIAL VAULT FORMS, Concrete

American Vault Works, Inc.,  
1015 Troost Ave., Forest  
Park, Ill.  
The Ashland Vault, Inc., 114  
Seventh St., Ashland, Ohio  
Automatic Sealing Vault Co.,  
Peru, Ind.  
Berg Vault Co., Equipment  
Div., 1620 Lucas Hunt  
Blvd., St. Louis, Mo.  
Dowell-Kover, 1821 Howell  
St., Fort Wayne 3, Ind.  
Norwalk Vault Co., Wood-  
lawn Ave., Norwalk, Ohio  
Safety Vault Co., 1700 Urbana  
Rd., Cleveland 12, Ohio  
Sterling Concrete Vault Co.,  
5400 Northwest Highway,  
Chicago, Ill.

## BURNERS, Kiln

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
The Babcock & Wilcox Co.,  
85 Liberty St., New York  
6, N. Y.  
McGann Mfg. Co., P. O. Box  
1187, York, Penn.  
MacLeod Co., 2232-40 Bogen  
St., Cincinnati, Ohio  
Raymond Pulverizer Div.,  
Combustion Engineering  
Co., Inc., 1319 N. Branch  
St., Chicago 22, Ill.  
W. A. Riddell Corp., Bucy-  
rus, Ohio  
Ruggles-Coles Engr. Co., 122  
E. 42nd St., New York,  
N. Y.  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y.

## BURNERS, OIL (See Oil Burners)

## CABINETS, First Aid (See also Safety Equip- ment)

Boyer-Campbell Co., 6540 An-  
toine St., Detroit 2, Mich.  
Mine Safety Appliances Co.,  
Braddock, Thomas &  
Meade St., Pittsburgh 8,  
Penn.  
Pulmonas Safety Equipment  
Corp., 178 Johnson St.,  
Brooklyn 1, N. Y.

## CABLE, Electric

Aluminum Company of Amer-  
ica, 801 Gulf Bldg., Pitts-  
burgh 19, Penn.  
American Steel & Wire Co.,  
Rockefeller Bldg., Cleve-  
land 13, Ohio  
Anaconda Wire & Cable Co.,  
25 Broadway, New York 4,  
N. Y.  
General Electric Co., 1 River  
Road, Schenectady 5, N. Y.  
Hobart Bros. Co., Hobart  
Square, Troy, Ohio  
Lincoln Electric Co., 12818  
Cott Rd., Cleveland 1, Ohio  
Okonite Co., Passaic, N. J.  
John A. Roebbing's Sons Co.,  
640 S. Broad, Trenton 2,  
N. J.  
Simplex Wire & Cable Co.,  
79 Sidney St., Cambridge  
39, Mass.  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.

## CABLE, ELECTRIC (Repair Compound)

Anaconda Wire & Cable Co.,  
25 Broadway, New York 4,  
N. Y.  
Glover Coating Co., 376  
Washington St., Malden,  
Mass.  
Okonite Co., Passaic, N. J.  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.

## CABLE ACCESSORIES, Connectors, Etc.

Aluminum Company of Amer-  
ica, 801 Gulf Bldg., Pitts-  
burgh 19, Penn.  
Anaconda Wire & Cable Co.,  
25 Broadway, New York 4,  
N. Y.

Electroline Co., 4121 S.  
La Salle St., Chicago, Ill.  
General Electric Co., 1 River  
Road, Schenectady 5, N. Y.  
The Hayward Co., 50 Church  
St., New York 7, N. Y.  
(Cable Reels)  
Manson Glover, 213 Pleasant  
Stoughton, Mass. (Repair  
Compound)  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.

## CABLE COATINGS, Electric

The B. F. Goodrich Co.,  
Akron, Ohio  
The Goodyear Tire & Rub-  
ber Co., Inc., 1144 E. Mar-  
ket, Akron, Ohio  
Okonite Co., Passaic, N. J.  
Sackrite, Inc., Apple & Van-  
dalia Sts., Cincinnati 23,  
Ohio  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.

## CABLE EXCAVATORS

American Hoist & Derrick  
Co., 63 S. Robert St., St.  
Paul, Minn.  
Beaumont Birch Co., 1505  
Race Street, Philadelphia,  
Penn.  
Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.  
Meckum Engr. Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.  
Sauerman Bros., Inc., 530 S.  
Clinton St., Chicago 7, Ill.  
Street Brothers Machine Co.,  
415 Ochs Bldg., Chatta-  
nooga 2, Tenn.

## CABLE CONNECTORS (Rubber Covered)

Electroline Co., 4121 S.  
La Salle St., Chicago, Ill.  
The Manhattan Rubber Mfg.  
Div. of Raybestos-Manhat-  
tan, Inc., 61 Willett St.,  
Passaic, N. J.  
John A. Roebbing's Sons Co.,  
640 S. Broad St., Trenton 2,  
N. J.  
Sullivan Machinery Co.,  
Woodland Ave., Michigan  
City, Ind.  
United States Rubber Co.,  
1230 6th Ave., New York  
20, N. Y.

## CABLEWAYS

American Chain & Cable Co.,  
Inc., Bridgeport, Conn.  
American Steel & Wire Co.,  
Rockefeller Bldg., Cleve-  
land 13, Ohio  
Groch Engr. Co., 628 W. 9th  
St., Los Angeles 15, Calif.  
Hazard Wire Rope Co.,  
American Chain & Cable  
Co., Inc., Wilkes-Barre,  
Penn.  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
John A. Roebbing's Sons Co.,  
640 S. Broad, Trenton 2,  
N. J.  
Sauerman Bros., Inc., 530 S.  
Clinton St., Chicago 7, Ill.  
Street Brothers Machine Co.,  
415 Ochs Bldg., Chatta-  
nooga 2, Tenn.

## CALCINING MACHINERY, Cement, Lime, Gypsum, Etc.

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Blaw-Knox Co., Blawnox,  
Penn.  
L. R. Christie Co., 17 East  
42nd St., New York 17,  
N. Y.  
J. P. Devine Mfg. Co., Inc.,  
Shawnee, Mt. Vernon,  
Ill.  
J. E. Ehrsam & Sons Mfg.  
Co., Enterprise, Kan.  
Ellerman Co., 203 Continen-  
tal Bldg., Salt Lake City,  
Utah

Hardinge Co., Inc., 240 Arch  
St., York, Penn.  
The Her-Born Engr. & Mfg.  
Co., Box 606, Sandusky,  
Ohio.  
Kennedy-Van Saun Mfg. &  
Eng. Corp., 2 Park Ave.  
Bldg., New York, N. Y.  
Manitowoc Eng. Wks., Man-  
itowoc, Wis.  
McGann Mfg. Co., Box 1187,  
York, Penn.  
Nordberg Process Mch. Co.,  
Cleveland, Ohio  
Raymond Pulverizer Div.,  
Combustion Engr. Co., 1319  
N. Branch St., Chicago, Ill.  
Ruggles-Coles Engr. Co., 122  
E. 42nd St., New York,  
N. Y.  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y.  
Traylor Eng. & Mfg. Co., Al-  
lertown, Penn.  
Vulcan Iron Works, 730 S.  
Main St., Wilkes-Barre,  
Penn.

## CALCIUM CHLORIDE

Calcium Chloride Assn.,  
Pencabot Bldg., Detroit,  
Mich.  
Columbia Alkali Corp., Bar-  
berton, Ohio (Div. of Pitts-  
burgh Plate Glass Co.)  
The Dow Chemical Co., Mid-  
land, Mich.  
E. I. du Pont de Nemours &  
Co., Nemours Bldg., Wil-  
mington 98, Del.  
Michigan Alkali Co., Ford  
Bldg., Detroit, Mich.  
Pittsburgh Plate Glass Co.,  
Columbia Chemical Div.,  
Grant Bldg., Pittsburgh 19,  
Penn.  
Solvay Sales Corp., 40 Rector  
St., New York 6, N. Y.

## CAGES, Mine

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
C. S. Card Iron Works Co.,  
2001 W. 16th Ave., Denver,  
Colo.  
Connellsville Mfg. & Mine  
Supply Co., Connellsville,  
Penn.  
Eagle Iron Works, 129 Hol-  
comb Ave., Des Moines,  
Iowa  
Eimco Corp., P. O. Box 300,  
Salt Lake City 5, Utah.  
Groch Engr. Co., 628 W. 9th  
St., Los Angeles 15, Calif.  
Joshua Hendy Iron Wks.,  
Box 37, Sunnyvale, Calif.  
The McCarter Iron Wks.,  
Inc., Mill & Washington  
Sts., Norristown, Penn.  
The Mine & Smelter Supply  
Co., P. O. Box 5270, Ter-  
minal Station, Denver 17,  
Colo.  
D. J. Murray Mfg. Co., Wau-  
sau, Wis.  
Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo.  
Southwestern Engr. Co., 4900  
Santa Fe Ave., Los Angeles  
11, Calif.  
Vulcan Iron Works, 730 S.  
Main St., Wilkes-Barre,  
Penn.  
Western Machinery Co., 760  
Folsom St., San Francisco,  
Calif.

## CAPACITORS, Electrical (See Electrical Instru- ments)

## CAPS, BLASTING (See Blasting Caps)

## CAPSTANS

Bucyrus-Erie Co., P. O. Box  
56, South Milwaukee, Wis.  
Continental Gin Co., Indus-  
trial Division, 4500 5th  
Ave., S.E., Birmingham,  
Ala.  
Detroit Hoist & Machine Co.,  
8201 Morrow Ave., Detroit  
11, Mich.

Diamond Iron Works, Inc.,  
and The Mahr Mfg. Co.,  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn.  
Dobbie Fdy. & Machine Co.,  
146-170 Portage Rd., Nias-  
ara Falls, N. Y.  
Gar Wood Industries, Inc.,  
7924 Riopelle St., Detroit  
11, Mich.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Link-Belt Co., 2410 West 18th  
St., Chicago 8, Ill.  
McKlerman-Terry Corp., 15  
Park Row, New York 7,  
N. Y.  
Meckum Engr., Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.  
Morrow Mfg. Co., 722 E. 10th  
St., Wellston, Ohio  
Novo Engine Co., 702 Porter  
St., Lansing, Mich.  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Six Wheels, Inc., 1559-1584  
E. 20th St., Los Angeles  
11, Calif.  
Street Bros. Machine Co.,  
415 Ochs Bldg., Chatta-  
nooga 2, Tenn.  
Struthers Wells Corp., 1003  
Pennsylvania Ave., West  
Warren, Penn.  
Webster Mfg., Inc., Tiffin,  
Ohio  
Wellman Engr. Co., 7000  
Central Ave., Cleveland 4,  
Ohio

## CAR COUPLINGS

Maddox Foundry & Machine  
Works, Archer, Fla.  
D. J. Murray Mfg. Co., Wau-  
sau, Wis.  
National Malleable and Steel  
Castings Co., 10600 Quincy  
Ave., Cleveland, Ohio  
Pacific Car & Fdy. Co., 4th  
and Factory St., Renton,  
Wash.  
Pressed Steel Car Co., Inc.,  
Indus. Div., 2500 Koppers  
Bldg., Pittsburgh 30,  
Penn.  
Sanford-Day Iron Works,  
Inc., Dale Ave., Knoxville,  
Tenn.

## CAR DUMPERS

The Atlas Car & Mfg. Co.,  
1100 Ivanhoe Rd., Cleve-  
land 10, Ohio  
Easton Car & Construction  
Co., Box 270, Easton,  
Penn.  
Industrial Brownhoist Corp.,  
135 Washington St., Bay  
City, Mich.  
Link-Belt Co., 300 W. Persh-  
ing Rd., Chicago 9, Ill.  
Pressed Steel Car Co., Inc.,  
Indus. Div., 2500 Koppers  
Bldg., Pittsburgh 30,  
Penn.  
Robins Conveyors, Inc., 270  
Passaic Ave., Passaic,  
N. J.  
Wellman Engr. Co., 7000  
Central Ave., Cleveland 4,  
Ohio  
The Woodford Engr. Co., 77  
W. Washington St., Chi-  
cago 2, Ill.

## CAR LINERS

American Manganese Steel  
Division of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill.  
Audubon Wire Cloth Corp.  
(Subsidiary of Manganese  
Steel Forge Co.), Rich-  
mond St. & Castor Ave.,  
Philadelphia, Penn.  
Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.  
Pressed Steel Car Co., Inc.,  
Indus. Division, 2500 Kop-  
pers Bldg., Pittsburgh 30,  
Penn.

## CAR LOADERS (See Loaders, Car)

# DIRECTORY

## CAR MOVERS (Pullers)

Advance Car Mover, Inc., P. O. Box 536, Appleton, Wis.  
American Holst & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
Appleton-Atlas Car Mover Corp., 2947 N. 30th St., Milwaukee, Wis.  
The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Clyde Iron Works, Inc., 29th Ave., W. & Michigan St., Duluth 1, Minn.  
Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. 233  
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Dobbie Fdy. & Mach. Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Electro Lift, Inc., 30 Church St., New York 7, N. Y.  
L. B. Foster Co., P. O. Box 1647, Pittsburgh 50, Penn.  
Gar Wood Industries, Inc., 7924 Riepelle St., Detroit 11, Mich.  
Gifford-Wood Co., Hudson, N. Y.  
Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill.  
Link-Belt Co., 2410 W. 16th St., Chicago 8, Ill. 1  
McKlerman-Terry Corp., 15 Park Row, New York 7, N. Y.  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
Pulmosan Safety Equipment Corp., 176 Johnson St., Brooklyn 1, N. Y.  
W. A. Riddell Corp., Bucyrus, Ohio  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N.J.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Webster Mfg., Inc., Tiffin, Ohio  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231  
Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.

## CAR WHEELS

American Manganese Steel Div. of American Brake Shoe Co., 399 E. 14th St., Chicago Heights, Ill. 201  
The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Bonnot Co., Mulberry Rd., S. E., Canton, Ohio  
C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
The Chase Fdy. & Mfg. Co., Columbus 7, Ohio  
Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.  
Dobbie Foundry & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Dresser Mfg. Div., Dress Industries, Inc., 41 Fischer Ave., Bradford, Penn.  
Eagle Iron Wks., 129 Holcomb Ave., Des Moines, Iowa  
Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio

George Haiss Mfg. Co., 391 Canal Pl., New York 51, N. Y.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
McGann Mfg. Co., P. O. Box 1187, York, Penn. 173  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
D. J. Murray Mfg. Co., Wausau, Wis.  
National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
Pettibone M'Ulken Corp., 4710 W. Division St., Chicago 51, Ill. 28  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 202  
Pressed Steel Car Co., Inc., Indus. Division, 2500 Koppers Bldg., Pittsburgh 30, Penn.  
Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. 200  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
CARS, Concrete Products  
Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
Chase Foundry & Mfg. Co., Columbus 7, Ohio  
W. E. Dunn Mfg. Co., 23 W. 24th St., Holland, Mich.  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
Pacific Car & Fdy. Co., 4th & Factory Sts., Renton, Wash.  
Pressed Steel Car Co., Inc., Indus. Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202  
Stearns Mfg. Co., Inc., Adrian, Mich. 208

## CARS, Dump

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Bethlehem Steel Co., Bethlehem, Penn. 22  
C. S. Card Iron Wks. Co., 2501 W. 16th Ave., Denver, Colo.  
The Chase Fdy. & Mfg. Co., Columbus 7, Ohio  
Differential Steel Car Co., Findlay, Ohio  
Easton Car & Construction Co., Box 270, Easton, Penn.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Maddox Fdy. & Mach. Wks., Archer, Fla.  
McGann Mfg. Co. P. O. Box 1187, York, Penn. 173  
Ottumwa Iron Wks., 402 W. Main St., Ottumwa, Iowa  
Pacific Car & Fdy. Co., 4th & Factory Sts., Renton, Wash.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 202  
Pressed Steel Car Co., Inc., Indus. Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202  
W. A. Riddell Corp., Bucyrus, Ohio  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7

## CARS (Electric, Remote Control)

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Pressed Steel Car Co., Inc., Indus. Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202  
The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.  
CARS, Mine, Quarry, Industrial  
The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bethlehem Steel Co., Bethlehem, Penn. 22  
The Buda Co., 18401 Commercial Ave., Harvey, Ill. 33  
C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
The Chase Fdy. & Mfg. Co., Columbus 7, Ohio  
Differential Steel Car Co., Findlay, Ohio  
Easton Car & Construction Co., Box 270, Easton, Penn.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.  
Maddox Fdy. & Mach. Wks., Archer, Fla.  
Manitowoc Eng. Works, Manitowoc, Wis. 35  
Mine & Smelter Supply Co., P. O. Box 8270, Terminal Station, Denver 17, Colo.  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
Ottumwa Iron Wks., 402 W. Main St., Ottumwa, Iowa  
Pacific Car & Fdy. Co., 4th & Factory, Renton, Wash.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 202  
Pressed Steel Car Co., Inc., Indus. Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Watt Car & Wheel Co., Barnesville, Ohio  
CARTRIDGES, Oil Filter  
Accessories Corp., Gastonia, N. C.  
W. G. B. Oil Clarifier, Inc., Kingston, N. Y.  
Wix Accessories Corp., Ozark St., Gastonia, N. C.  
CARTRIDGES (Rotary, Kiln, Slag Removal)  
Cardox Corp., 307 N. Michigan Ave., Chicago 1, Ill.  
CASTINGS (Repair Parts): Bronze  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
Maddox Fdy. & Mach. Wks., Archer, Fla.

Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.  
Morris Machine Wks., Baldwinville, N. Y.

## CASTINGS (Repair Parts): Grey-Iron

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bethlehem Steel Co., Bethlehem, Penn. 22  
The Bonnot Co., Mulberry Rd. S.E., Canton, Ohio  
The Burch Corp., Crestline, Ohio  
The Chase Fdy. & Mfg. Co., Columbus 7, Ohio  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Davenport-Besler Corp., 2305 Rockingham Rd., Davenport, Iowa  
Diamond Iron Wks. & The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Dobbie Fdy. & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Eagle Iron Wks., 129 Holcomb Ave., Des Moines, Ia. 205  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Hardings Co., Inc., 240 Arch St., York, Penn. 225  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
N.E. Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
Maddox Fdy. & Mach. Wks., Archer, Fla.  
Manitowoc Engr. Wks., Manitowoc, Wis. 35  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Morris Machine Wks., Baldwinville, N. Y.  
Multiplex Concrete Mch. Co., Elmore, Ohio 217  
Ottumwa Iron Wks., 402 W. Main St., Ottumwa, Iowa  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 202  
Quinn Wire & Iron Wks., Boone, Iowa  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Sanford-Day Iron Wks., Inc., Dale Ave., Knoxville, Tenn.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Sprout, Waldron & Co., Muncy, Penn.  
Stearns Mfg. Co., Inc., Adrian, Mich. 208  
Stedman's Fdy. & Machine Wks., Aurora, Ind.  
The Webb Corp., 402 E. Broadway, Webb City, Mo.  
Webster Mfg., Inc., Tiffin, O.  
CASTINGS (Repair Parts): Heat-Resisting Steel  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Bethlehem Steel Co., Inc., Bethlehem, Penn. 22  
The Duraloy Co., Scottsdale, Penn.  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
Enterprise Engine & Foundry Co., 18th & Florida St., San Francisco 10, Calif.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1



# DIRECTORY

Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd cover  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129

## CASTINGS (Repair Parts):

Malleable  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis., 223  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio, 51  
Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind., 1  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd cover  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129  
Webster Mfg., Inc., Tiffin, Ohio.

## CASTINGS (Repair Parts):

Manganese Steel  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill., 201  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y., 244  
Bethlehem Steel Co., Bethlehem, Penn., 22  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
The Frog, Switch & Mfg. Carlsile, Penn., 243  
Kensington Steel Co., 506 Kensington Ave., Chicago 28, Ill.  
Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
Petibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd cover  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129  
Stulz-Sickles Co., 134 Lafayette St., Newark 5, N. J.  
Taylor-Warton Iron & Steel Co., High Bridge, N. J., 76

## CASTINGS (Repair Parts):

Special Alloys  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y., 62  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y., 244  
Bethlehem Steel Co., Bethlehem, Penn., 22  
The Duraloy Co., Scottsdale, Penn.  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.  
Kensington Steel Co., 506 Kensington Ave., Chicago 28, Ill.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn., 48  
Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd cover

Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129  
Taylor-Wharton Iron & Steel Co., High Bridge, N. J., 16  
Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

## CASTINGS (Repair Parts):

Steel  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y., 244  
Bethlehem Steel Co., Bethlehem, Penn., 22  
Birdsboro Steel Fdy. & Machine Co., 1941 Furnace St., Birdsboro, Penn.  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Link-Belt Co., 519 N. Holmes Ave., Indianapolis 6, Ind., 1  
Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd cover  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129  
Vuican Iron Wks., 730 S. Main St., Wilkes-Barre, Penn., 8

## CATCH BASIN BLOCK MACHINERY AND MOLDS

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio, 210  
Besser Mfg. Co., Alpena, Mich., 211  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
Multiplex Concrete Mch. Co., Elmore, Ohio, 217  
Stearns Mfg. Co., Inc., Adrian, Mich., 208

## CELLS (See Photoelectric Cells)

## CEMENT, Boiler Setting

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y., 62  
General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.  
A. P. Green Fire Brick Co., Mexico, Mo.  
Harblson-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
E. J. Lavino & Co., 1528 Walnut St., Philadelphia 2, Penn.  
Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.  
Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.  
Refractory & Insulation Corp., 120 Wall St., New York 5, N. Y.  
Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

## CEMENT, Insulating

General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.

A. P. Green Fire Brick Co., Mexico, Mo.  
Harblson-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.

Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.  
Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.  
Refractory & Insulation Corp., 120 Wall St., New York 5, N. Y.  
The Ruberoid Co., 500 Fifth Ave., New York, N. Y.  
Sackrete Int., Apple & Vandalla Sts., Cincinnati 23, Ohio  
Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.

## CEMENT, Refractory

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y., 62  
The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y.  
General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.  
A. P. Green Fire Brick Co., Mexico, Mo.  
Harblson-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
E. J. Lavino & Co., 1528 Walnut St., Philadelphia 2, Penn.  
Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.  
Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.  
Refractory & Insulation Corp., 120 Wall St., New York 5, N. Y.  
The Ruberoid Co., 500 Fifth Ave., New York, N. Y.  
Stockton Fire Brick Co., 1267 Russ Bldg., 235 Montgomery St., San Francisco, Calif.  
Walsh Refractories Corp., 4070 North First St., St. Louis 7, Mo.

## CEMENT COOLERS (See Coolers, Bulk Cement)

## CEMENT DISPERSION AGENTS

American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
Dewey & Almy Chem. Co., 62 Whittemore Ave., Cambridge, Mass.  
Lasting Prod. Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio  
Sika, Inc., 332 W. 42nd St., New York, N. Y.

## CEMENT AND MASONRY COLORS

American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
Ricketson Mineral Color Works, 229 E. Wisconsin Ave., Milwaukee 2, Wis.  
Tammis Silica Co., 228 N. La Salle St., Chicago 1, Ill.  
Utility Color Co., 377-99 Frelinghuysen Ave., Newark 5, N. J.  
C. K. Williams & Co., 640 North 13th St., Easton, Penn.

## CEMENT PLANTS, Engineers & Contractors

Allis-Chalmers Mfg. Co., 1945 Proctor St., Milwaukee, Wis.  
Cement Mill Equipment Co., 9718 Otsego Ave., Detroit, Mich.  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y., 193  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11  
E. C. Machin Co., 624 Commonwealth Bldg., Allentown, Penn.  
The Nicholson Co., Inc., 10 Rockefeller Plaza, New York 20, N. Y.  
Nordberg Process Mach. Co., Cleveland, Ohio  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn., 92  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Separation Process Co., Fuller Bldg., Catasauqua, Penn.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129  
Standard Steel Corp., 5001 So. Boyle Ave., Los Angeles 11, Calif.  
Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass., 30  
Traylor, Engr. & Mfg. Co., Allentown, Penn., 7  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn., 8  
Western Mch. Co., 780 Folsom St., San Francisco, Calif.

## CEMENT PUMPS (Finished Cement)

Fuller Co., Fuller Bldg., Catasauqua, Penn., 14, 15  
Separation Process Co., Fuller Bldg., Catasauqua, Penn.  
Robinson Air Activated Conveyor Systems, Division of Morse Boulder Destructor Co., 205 E. 42nd St., New York 17, N. Y.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y., 128, 129

## CEMENT TESTING APPARATUS (See Testing Equipment)

## CENTRAL MIXING PLANTS, Concrete

C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
Blaw-Knox Co., Blawnox, Penn., 245  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Butler Bin Co., Box 407, Waukegan, Wis., 54  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis., 223  
Commercial Concrete Equip. Co., 4 Wolf's Lane, Pelham 65, N. Y.  
Concrete Transport Mixer Co., 650 Rosedale Ave., St. Louis 12, Mo., 219  
Erie Steel Construction Co., 19th & Geist Road, Erie, Penn., 204  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio, 23  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill., 234  
Henry J. Kaiser, Latham Sq. Bldg., Oakland 12, Calif.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill., 1  
Mixermobile Co., Inc., 608 S. Hill St., Los Angeles, Calif.  
Noble Co., 1800 7th St., Oakland 7, Calif.

# DIRECTORY

T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis. 185  
Spears-Wells Machy. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.  
Standard Steel Corp., 5001 So. Boyle Ave., Los Angeles, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

## CENTRIFUGES, Cement Slurry, Etc.

Bird Machine Co., S. Walpole, Mass. 130  
Separation Process Co., Fuller Bldg., Catauqua, Penn. F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129  
Western Machinery Co., 760 Folsom St., San Francisco, Calif. 129

## CHAIN, Dredge and Shovel

American Chain Div., American Chain & Cable Co., Inc., York, Penn. 3rd cover  
American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th Cover  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Columbus McKinnon Chain Corp., Tonawanda, N. Y. Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Oregon  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kennedy-Van Saun Mfg. & Engr. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Co., 220 South Belmont Ave., Indianapolis 6, Ind. 1  
Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn. Meckum Engineering Co., 53 W. Jackson Blvd., Chicago 4, Ill.  
National Malleable & Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago, Ill.

## CHAIN DRIVES

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. 233  
Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Diamond Chain & Mfg. Co., 520 Kentucky Ave., Indianapolis 7, Ind.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Industrial Gear Mfg. Co., 4644 W. Van Buren St., Chicago 24, Ill. 227  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Co., 220 South Belmont Ave., Indianapolis 6, Ind. 1

The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morse Chain Co., Turner Place, Ithaca, N. Y.  
Philadelphia Gear Wks., Inc., Erie Ave. & G. St., Philadelphia 34, Penn.  
Stephen-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## CHAIN, Elevating and Conveying

American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
Beaumont Birch Co., 1505 Race St., Philadelphia, Penn.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. 233  
Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Diamond Chain & Mfg. Co., 520 Kentucky Ave., Indianapolis 7, Ind.  
Fairfield Engr. Co., Marion, Ohio  
Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
Gifford-Wood Co., Hudson, N. Y.  
George Halsas Mfg. Co., Inc., 391 Canal Pl., New York, N. Y.  
Industrial Gear Mfg. Co., 4644 W. Van Buren St., Chicago 24, Ill. 227  
Iowa Mfg. Co., 916 16th St., N. E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kennedy-Van Saun Mfg. & Engr. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 220 South Belmont Ave., Indianapolis 6, Ind. 1  
Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
Morse Chain Co., Turner Place, Ithaca, N. Y.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
D. J. Murray Mfg. Co., Wausau, Wis.  
National Steel Prod. Co., 1611 Crystal Ave., Kansas City 3, Mo.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 61, Ill.  
Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. 200  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Taylor-Wharton Iron & Steel Co., High Bridge, N. J. 16  
Union Chain & Mfg. Co., 1936 Emmons St., Sandusky, Ohio  
Webster Mfg. Inc., Tiffin, Ohio  
Wisconsin Fdy. & Machine Co., 623 E. Main, Madison 1, Wis.

## CHAIN, Heat Exchanger, etc.

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Columbus McKinnon Chain Corp., Tonawanda, N. Y.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Oregon  
Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind. 1  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129

## CHAIN LINKS, Fittings, Hooks, Etc.

American Chain Div., American Chain & Cable Co., Inc., York, Penn. 3rd Cover  
American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Audubon Wire Cloth Corp. (Subsidiary of Manganese Steel Forge Co.), Richmond St. & Castor Ave., Philadelphia, Penn.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th Cover  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Columbus McKinnon Chain Corp., Tonawanda, N. Y.  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Oregon  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Thomas Laughlin Co., 143 Fore St., Portland, Maine  
Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind. 1  
National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.  
Wisconsin Fdy. & Machine Co., 623 E. Main, Madison 1, Wis.

## CHAINS, Drag

American Chain Div., American Chain & Cable Co., Inc., York, Penn. 3rd Cover  
American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Columbus McKinnon Chain Corp., Tonawanda, N. Y.  
Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Oregon  
Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
Greenville Mfg. Works, Greenville, Ohio  
George Halsas Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Co., 220 South Belmont Ave., Indianapolis 6, Ind. 1  
Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
D. J. Murray Mfg. Co., Wausau, Wis.

National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
Joseph T. Ryerson & Son, Inc., 16th and Rockwell St., Chicago, Ill. 169  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 16  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## CHIMNEY BLOCK MACHINERY & MOLDS, Concrete

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218  
Besser Manufacturing Co., Alpena, Mich. 211  
Multiplex Concrete Machinery Co., Elmore, Ohio. 217  
Searns Mfg. Co., Inc., Adrian, Mich. 208

## CHUTE LININGS, Rubber

The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif.  
Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass.  
The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Station, Cincinnati 12, Ohio 222  
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo. 44  
The Gallagher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.  
The B. F. Goodrich Co., Akron, Ohio 5  
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio 9  
Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. 11  
Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.  
Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. 171  
Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown 1, Ohio. 165  
Thermold Rubber Div. of Thermold Co., Whitehead Rd., Trenton 8, N. J.  
United States Rubber Co., 1230 6th Ave., New York 20, N. Y.

## CHUTE LININGS, Other

American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Audubon Wire Cloth Corp. (Subsidiary of Manganese Steel Forge Co.), Richmond St. & Castor Ave., Philadelphia, Penn.  
The Babcock & Wilcox Co., 85 Liberty Street, New York, N. Y. 62  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 19, Penn.  
Chicago Perforating Co., 2448 W. 24th Pl., Chicago, Ill. 218  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.

# DIRECTORY

Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
 Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 Southern Friction Materials Co., P. O. Box 1475, Charlotte 1, N. C.  
 Sprout, Waldron & Co., Muncy, Penn.  
 Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 18

## CHUTES

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
 American Manganese Steel Div. American Brake Shoes Co., 399 E. 14th St., Chicago Heights, Ill. 201  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 L. Burmeister Co., 3225 W. Burnham St., Milwaukee 4, Wis.  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. 177  
 George Hals Mfg. Co., Inc., 291 Canal Pl., New York 51, N. Y.  
 Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa 186  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Lippmann Eng. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 The Neff & Fry Co., Camden, Ohio  
 Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 Ransome Mch. Co., Dunellen, N. J.  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Trowbridge Conveyor Co., 750 Van Houten Ave., Clifton, N. J.  
 Universal Rd. Mch. Co., 27 Emerick St., Kingston, N. Y. 239  
 Webster Mfg. Inc., Timm, Ohio

## CIRCUIT BREAKERS

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
 I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Penn.

Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis. 56  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
 CIRCUIT TESTERS (Electrical)  
 (See Electrical Instruments)

## CLARIFIERS, AIR (See Air Filters)

CLARIFIERS, OIL  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
 Wix Accessories Corp., Ozark St., Gastonia, N. C.

CLASSIFIERS, Centrifugal  
 Bird Machine Co., S. Walpole, Mass. 130  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

CLASSIFIERS, Electrostatic  
 Ritter Products Corp., Ritter Park, Rochester 3, N. Y.  
 Sutton, Steele & Steele, Inc., 1031 So. Haskell St., Dallas 10, Texas.

## CLASSIFIERS, Hydraulic

Allen Cone & Mch. Co., 120 Broadway, New York 5, N. Y.  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Colorado Iron Works Co., 1624 17th St., Denver 2, Colo.  
 The Deister Concentrator Co., 901-935 Glasgow Ave., Fort Wayne, Ind.  
 Deister Machine Co., 1933 E. Wayne St., Fort Wayne 4, Ind. 228  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
 Eagle Iron Works, 129 Holcomb, Des Moines, Iowa. 205  
 The Gailgair Co., 48 South Second East St., Salt Lake City 1, Utah  
 Greenville Mfg. Works, Greenville, Ohio  
 Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
 Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
 Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa. 186  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Lippmann Eng. Works, 4603 W. Mitchell, Milwaukee 14, Wis.  
 Maddox Foundry & Machine Works, Archer, Fla.  
 The Mine & Smelter Supply Co., 1422 17th St., Denver, Colo.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
 Smith Engineering Works, 532 E. Capitol Dr., Milwaukee, Wis. 56  
 Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.  
 Western Machinery Co., 750 Folsom St., San Francisco, Calif.

## CLASSIFIERS, SAND (See Sand Recovery Machinery)

## CLEANING MACHINES, Bag (See Bag Cleaners)

## CLINKER COOLERS (See Coolers, Cement Limes, etc.)

## CLIPS, WIRE ROPE (See Wire Rope Fittings)

## CLOTH, WIRE (See Wire Cloth)

## CLUTCH FACINGS (See Brake Linings)

## CLUTCHES

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Earle C. Bacon, Inc., 17 John Street, New York 7, N. Y. 244  
 Continental Gin Co., Industrial Division, 4500 8th Ave. So., Birmingham, Ala. 233  
 Diamond Iron Works, Inc. and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
 Dings Magnetic Separator Co., 505 E. Smith St., Milwaukee 7, Wis.  
 Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.  
 Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.  
 Godfrey Conveyor Co., 13th & Wolf Sts., Elkhart, Ind.  
 George Hals Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
 The Hillard Co., 400 W. 4th St., Elmira, N. Y.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26  
 Kent Machine Co., Cuyahoga Falls, Ohio 219  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Maddox Fdy. & Machine Works, Archer, Fla.  
 Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
 Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.  
 Stearns Magnetic Mfg. Co., 675 S. 28th St., Milwaukee 4, Wis.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Twin Disc Clutch Co., 1361 Racine St., Racine, Wis.  
 T. B. Wood's Sons Co., 1325 Fifth Ave., Chambersburg, Penn.

## COAL PULVERIZING EQUIPMENT

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
 Diamond Iron Works, Inc. and the Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
 Dixie Mch. Mfg. Co., 4200 Goodfellow, St. Louis, Mo. 195  
 Eagle Crusher Co., 900 Harding Way, East, Gallon, Ohio 25  
 Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. 177  
 Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Lippmann Engr. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
 The Mine & Smelter Supply Co., Box 5270 Terminal Station, Denver 17, Colo.  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 Raymond Pulverizer Div., Combustion Eng. Co., Inc., 1319 North Branch Street, Chicago 22, Ill. 18, 19

F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 129  
 Strong-Scott Mfg. Co., Taft & Kennedy St., N.E., Minneapolis 13, Minn.  
 Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. 39  
 Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.  
 Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

## COAL PULVERIZING EQUIPMENT, Direct-Firing Unit Mills

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 The Babcock & Wilcox Co., 85 Liberty St., New York, N. Y. 62  
 Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
 Kennedy-Van Saun Mfg. & Engr. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Raymond Pulverizer Div., Combustion Engr. Co., Inc., 1319 North Branch Street, Chicago 22, Ill. 18, 19  
 F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 129  
 The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.  
 Strong-Scott Mfg. Co., Taft & Kennedy St., N.E., Minneapolis 13, Minn.  
 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.  
 Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis, Mo. 29

## COLORS, Cement (See Cement & Masonry Colors)

## COLORS, Mortar (See Masonry Colors)

## CONCENTRATING TABLES

Allen Cone & Machy. Corp., 120 Broadway, New York 5, N. Y.  
 The Deister Concentrator Co., 901-935 Glasgow Ave., Fort Wayne, Ind.  
 Deister Machine Co., 1933 E. Wayne St., Fort Wayne 4, Ind. 228  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
 The Mine & Smelter Supply Co., P. O. Box 5270 Terminal Station, Denver 17, Colo.  
 Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
 Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.  
 Sutton, Steele & Steele, Inc., 1031 S. Haskell St., Dallas 10, Texas

## CONCRETE BLOCK MACHINES (See Block Machines; Building, Concrete)

## CONCRETE CONTRAL Systems, Quality

Scientific Concrete Service Corp., 1252 Waverly Place, Elizabeth 3, N. J.

## CONCRETE MIXERS

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
 Besser Mfg. Co., Alpena, Mich. 211  
 Chain Belt Company, 1600 W. Bruce St., Milwaukee 4, Wis. 223  
 Concrete Transport Mixer Co., Inc., 650 Rosedale Ave., St. Louis 12, Mo. 219  
 Construction Machinery Co., Glenwood & Vinton St., Waterloo, Iowa



# DIRECTORY

W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.  
 Erie Steel Construction Co., 19th & Geist Rd., Erie, Penn. 204  
 Gilson Bros. Co., Fredonia, Wis. 245  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
 Kadeo Corp., 36-40 11th St., Long Island City, L. I., N. Y. (Subsidiary of Complete Mch. & Equip. Co.)  
 Kent Machine Co., Cuyahoga Falls, Ohio 219  
 Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256  
 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
 Mixermobile Co., Inc., 608 S. Hill St., Los Angeles, Calif.  
 Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
 Multiplex Concrete Machinery Co., Elmore, Ohio 217  
 H. K. Porter Co., Inc., 49th & Harrison St., Pittsburgh, Penn. 2nd cover  
 Ransome Machinery Co., Dunellen, N. J.  
 T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis. 185  
 Spears-Wells Mchry. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.  
 Stearns Mfg. Co., Adrian, Mich. 206  
**CONCRETE MIXERS, Truck**  
 Blaw-Knox Co., Blawnox, Penn. 245  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
 Commercial Concrete Equipment Co., 1 Wolf's Lane, Pelham 65, N. Y.  
 Concrete Transport Mixer Co., 650 Rosedale Ave., St. Louis 12, Mo. 219  
 Consarco, Inc., 1600 S. Capitol St., Washington 3, D. C.  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
 Mixermobile Co., Inc., 608 S. Hill Street, Los Angeles, Calif.  
 Ransome Machinery Co., Dunellen, N. J.  
 T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis. 185  
 Spears-Wells Mchry. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.

## CONCRETE MIXING PLANTS. (See Central Mixing Plants, Concrete)

## CONCRETE PAINTS AND COATINGS

American Cement Paint Co., Chattanooga, Tenn.  
 American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
 Colocrete Industries, Inc., Holland, Mich.  
 E. I. du Pont de Nemours & Co., Inc., Nemours Bldg., Wilmington 98, Del. 57  
 Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.  
 Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
 Quigley Co., Inc., 527 5th Ave., New York 17, N. Y.  
 Reardon Color & Chem. Wks., Cincinnati, Ohio  
 Tamms Silico Co., 228 N. La Salle St., Chicago, Ill.  
 Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.

## CONCRETE PLANTS Premixed, Dry

Sackrete, Inc., Apple & Vandalia Sts., Cincinnati 23, Ohio

## CONCRETE PRODUCTS CURING EQUIPMENT

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
 The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
 Multiplex Concrete Machinery Co., Elmore, Ohio 217  
 Price Bros. Co., 1932 E. Monument Ave., Dayton, Ohio  
 Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.

## CONCRETE PRODUCTS HANDLING EQUIPMENT

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
 Barrett-Craves Co., 3235 W. 30th St., Chicago, Ill.  
 Besser Mfg. Co., Alpena, Mich. 211  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
 The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
 Continental Gin Co., Industrial Div., 4600 5th Ave. So., Birmingham, Ala. 233  
 W. E. Dunn Mfg. Co., 23 W. 24th St., Holland, Mich.  
 Erickson Special Equipment Co., 2631 Ulysses, N. E., Minneapolis, Minn.  
 Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. 204  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 George Halsz Mfg. Co., Inc., 391 Canal Pl., New York 31, N. Y.  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
 Multiplex Concrete Machinery Co., Elmore, Ohio 217  
 Price Bros. Co., 1932 East Monument Ave., Dayton, Ohio  
 Quinn Wire & Iron Wks., Boone, Iowa  
 Ransome Mchry. Co., Dunellen, N. J.  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Stearns Mfg. Co., Inc., Adrian, Mich. 206  
 Williamette Hyster Co., 2902 N. E. Clackamas, Portland, Ore.

## CONCRETE, REINFORCING Steel

American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 19, Penn.  
 Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
 Jones & Laughlin Steel Corp., Muncy, Penn.  
 Kaiser Co., Inc., Iron & Steel Div., Latham Sq. Bldg., Oakland 12, Calif.  
 Fred T. Kern Co., P. O. Box 2057, Milwaukee 1, Wis.  
 Norwalk Vault Co., Woodlawn Ave., Norwalk, Ohio

Pittsburgh Steel Co., Grant Bldg., Pittsburgh 30, Penn.  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill. 169  
 Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Ala.  
 Truscon Steel Co., Albert St., Youngstown, Ohio  
 Union Steel Prod. Co., 242 N. Berrien St., Albion, Mich.  
 Wickwire Spencer Steel Co., 500 5th Ave., New York 18, N. Y.

## CONCRETE WATERPROOFING AND DAMPROOFING

American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
 W. E. Dunn Mfg. Co., 2300 Parsons Ave., Holland, Mich.  
 Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
 The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio  
 Sackrete Inc., Apple St. & Vandalla, Cincinnati, Ohio  
 Solway Sales Corp., 40 Rector St., New York 6, N. Y.  
 Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.  
 Universal Zonolite Insulation Co., 135 So. La Salle St., Chicago 3, Ill.

## CONDUIT, Concrete, PIPE MACHINES

Concrete Pipe Machinery Co., 9th & Division St., Sioux City 19, Iowa  
 Quinn Wire & Iron Wks., Boone, Ia.  
 Universal Concrete Pipe Co., 297 S. High St., Columbus, Ohio

## CONDUIT, Electrical

Aluminum Company of America, 801 Gulf Bldg., Pittsburgh 19, Penn.  
 American Brass Co., 414 Meadow St., Waterbury 88, Conn.  
 Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.  
 General Electric Co., 1 River Road, Schenectady 5, N. Y.  
 Johns-Manville, 22 E. 40th St., New York 16, N. Y.

## CONTROL SYSTEMS, Draft, Temperature, Pressure, Etc.

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Bailey Meter Co., 1050 Ivanhoe Road, Cleveland 10, Ohio  
 Bristol Co., Waterbury 91, Conn.  
 Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
 Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
 The Hays Corp., Michigan City, Ind.  
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
 Manning, Maxwell & Moore, Inc., 11 Elias St., Bridgeport 2, Conn.  
 F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## CONTROLS, Bin and Tank Levels

Bailey Meter Co., 1050 Ivanhoe Road, Cleveland 10, Ohio

Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
 The Bin-Dicator Co., 14615 E. Jefferson Ave., Detroit 15, Mich.  
 Blaw-Knox Co., Blawnox, Penn. 245  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.  
 F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
 Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## CONVERTERS, Electric

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Louis Allis Co., 427 E. Steward St., Milwaukee 7, Wis.  
 Crocker-Wheeler Electric Mfg. Co., Div. of Joshua Hendry Iron Works, Ampere, N. J.  
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
 Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
 Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## CONVEYOR BELT TRIPPERS

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
 The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio  
 Continental Gin Co., Industrial Division, 4600 5th Ave., So., Birmingham, Ala. 233  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Diamond Iron Works Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
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 Fairfield Eng. Co., Marion, Ohio  
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 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Lippmann Eng. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
 Noble Co., 1860 7th St., Oakland 7, Calif. 229  
 W. A. Riddell Corp., Warren St., Bucyrus, Ohio  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Sprout, Waldron & Co., Muncy, Penn.  
 Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Webster Manufacturing, Inc., Tiffin, Ohio

# DIRECTORY

## CONVEYOR IDLERS

Atlas Conveyor Co., 15th St., Clintonville, Wis.  
 Earle C. Bacon, Inc., 17 John St., York York 7, N. Y. .... 244  
 Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 175  
 The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
 The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio  
 Continental Gin Co., Industrial Division, 4500 5th Ave. So., Birmingham, Ala. .... 233  
 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Coyle & Roth Co., Inc., 3024 S. E. 4th St., Minneapolis 14, Minn.  
 The Dayton Rubber Mfg. Co., 2342 W. Riverview Ave., Dayton 1, Ohio  
 Diamond Iron Works, Inc. and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247  
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 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Kennedy-Van Saun Mfg. & Engineering Co., 2 Park Ave. Bldg., New York City, N. Y. .... 10 & 11  
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 Maddox Foundry & Machine Works, Archer, Fla.  
 Meckum Engineering Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
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 Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227  
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 The Standard Metal Mfg. Co., Malinta, Ohio  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Trowbridge Conveyor Co., 750 Van Houten Ave., Clifton, N. J.  
 Webster Manufacturing, Inc., Tiffin, Ohio  
 Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

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Allis-Chalmers Mfg. Co., 1945 Prodd St., Milwaukee 1, Wis.  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
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 C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
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 Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Gifford-Wood Co., Hudson, N. Y.  
 Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
 Gruendler Crusher & Pulverizer Co., 2915-17 North Market St., St. Louis, Mo. 177  
 George Halas Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
 Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.  
 Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa. 166  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York City, N. Y. .... 10 & 11  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
 Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
 Mathews Conveyor Co., Tenth Street, Ellwood City, Penn.  
 Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
 Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
 New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7  
 Universal Engineering Corp., 625 C Ave., W., Cedar Rapids, Iowa  
 Webster Manufacturing, Inc., Tiffin, Ohio

## CONVEYORS, Belt

Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.  
 Atlas Conveyor Co., 15th St., Clintonville, Wis.  
 Austin-Western Co., 501 Farnsworth Ave., Aurora, Ill. .... 53  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
 Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 175  
 The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Bonded Scale Co., 128 Bellview, Columbus 7, Ohio  
 Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass.  
 The Burch Corp., Crestline, Ohio  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
 The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio  
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Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
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 Diamond Iron Works, Inc. and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247  
 Dodge Manufacturing Corp., 500 S. Union St., Mishawaka, Ind.  
 A. B. Farquhar Co., Ltd. (Portable Machinery Div.), N. Duke St., York, Penn.  
 Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
 Goodman Manufacturing Co., 4834 S. Halsted, Chicago 9, Ill.  
 The B. F. Goodrich Company, Akron, Ohio ..... 5  
 The Goodyear Tire & Rubber Co., 1144 E. Market, Akron, Ohio  
 Greenville Mfg. Works, Greenville, Ohio  
 Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
 Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177  
 George Halas Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
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 Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa. 166  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York City, N. Y. .... 10 & 11  
 Kent Machine Co., Cuyahoga Falls, Ohio ..... 219  
 Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
 Lippmann Eng. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
 Mathews Conveyor Co., 10th St., Ellwood City, Penn.  
 Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
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 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 N. P. Nelson Iron Works, Inc., 820 Bloomfield Ave., Clifton, N. J.  
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 Pioneer Engr. Wks., Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227  
 Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.  
 Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. .... 171  
 W. A. Riddell Corp., Warren St., Bucyrus, Ohio  
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 Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200  
 Screw Conveyor Corp., Hammond, Ind.  
 Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56  
 Sprout, Waldron & Co., Muncy, Penn.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6

Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 Trowbridge Conveyor Co., 750 Van Houten Ave., Clifton, N. J.  
 Universal Engineering Corp., 625 C Ave. W., Cedar Rapids, Iowa  
 Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. .... 239  
 Webster Manufacturing, Inc., Tiffin, Ohio  
 Wickwire Spencer Steel Co., 500 5th Ave., New York 16, N. Y.  
 Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.  
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 Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 175  
 Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Bonded Scale Co., 128 Bellview, Columbus 7, Ohio  
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 The Ducon Co., 259 Norwin Ave., Brooklyn 22, N. Y.  
 Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
 A. B. Farquhar Co., Ltd. (Portable Mch. Div.), N. Duke St., York, Penn.  
 Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
 Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
 Greenville Mfg. Works, Greenville, Ohio  
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 George Halas Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
 Helmick Foundry-Mach. Co., Lock Drawer 71, Fairmont, W. Va.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
 Mathews Conveyor Co., 10th St., Ellwood City, Penn.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 D. J. Murray Mfg. Co., Wausau, Wis.  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Sullivan Mch. Co., Woodland Ave., Michigan City, Ind.  
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Trowbridge Conveyor Co.,  
750 Van Houten Ave., Clif-  
ton, N. J.  
Vulcan Iron Wks., 730 S.  
Main St., Wilkes-Barre,  
Penn.  
Webster Manufacturing, Inc.,  
Tiffin, Ohio  
Wisconsin Foundry & Ma-  
chine Co., 623 E. Main,  
Madison 1, Wis.

## CONVEYORS, Overhead Traveling

Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Fran-  
cisco 24, Calif.  
Chain Belt Co., 1600 W.  
Bruce St., Milwaukee 4,  
Wis.  
The Cleveland Crane & En-  
gineering Co., Wickliffe,  
Ohio  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles  
11, Calif.  
A. B. Farquhar Co., Ltd.  
(Portable Machinery Div.),  
N. Duke St., York, Penn.  
Gifford-Wood Co., Hudson,  
N. Y.  
Godfrey Conveyor Co., 13th  
& Wolf, Elkhart, Ind.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Mathews Conveyor Co., 10th  
St., Ellwood City, Penn.  
Pioneer Engr. Wks., Inc.,  
1515 Central Ave., Min-  
neapolis 13, Minn.  
Trowbridge Conveyor Co.,  
750 Van Houten Ave., Clif-  
ton, N. J.  
Wisconsin Foundry & Ma-  
chine Co., 623 E. Main,  
Madison 1, Wis.

## CONVEYORS, Pan

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Alpha Tank & Sheet Metal  
Mfg. Co., 5001 S. 38th St.,  
St. Louis 16, Mo.  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill.  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
24, Calif.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis.  
Continental Gin Co., Indus-  
trial Div., 4500 5th Ave.  
So., Birmingham, Ala.  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles,  
Calif.  
Gifford-Wood Co., Hudson,  
N. Y.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Lippmann Eng. Works, 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn.  
Mathews Conveyor Co., 10th  
St., Ellwood City, Penn.  
McNally - Pittsburg Mfg.  
Corp., Pittsburg, Kan.  
Morrow Mfg. Co., 722 East  
Tenth St., Wellston, Ohio  
National Steel Products Co.,  
1611 Crystal Ave., Kansas  
City 3, Mo.  
Pioneer Engr. Works, Inc.,  
1515 Central Ave., Min-  
neapolis 13, Minn.  
Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo.  
Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.  
Webster Manufacturing, Inc.,  
Tiffin, Ohio

## CONVEYORS, Pneumatic (See Air Conveyors)

## CONVEYORS, Portable

Anderson Engr. Co., 19-21  
Charles St., Cambridge 41,  
Mass.  
Atlas Conveyor Co., 15th St.,  
Clintonville, Wis.  
Austin-Western Co., 501  
Farnsworth Ave., Aurora,  
Ill.  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y.  
Barber-Greene Co., 631 W.  
Park Ave., Aurora, Ill.  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Fran-  
cisco 24, Calif.  
Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
The Burch Corp., Crestline,  
Ohio  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles,  
11, Calif.  
Coyle & Roth Co., Inc., 3024  
S. E. 4th St., Minneapolis  
14, Minn.  
Diamond Iron Works, Inc.,  
and The Mahr Mfg. Co.,  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn.  
A. B. Farquhar Co., Ltd.  
(Portable Machinery Div.)  
N. Duke St., York, Penn.  
General Conveyor & Mfg.  
Co., Inc., 3601 Salena, St.  
Louis, Mo.  
Godfrey Conveyor Co., 13th  
& Wolf, Elkhart, Ind.  
George Halss Mfg. Co., Inc.,  
391 Canal Pl., New York  
51, N. Y.  
Hercules Steel Products Co.,  
Sherman St., Gallon, Ohio  
Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore-  
gon  
Iowa Mfg. Co., 916 16th St.,  
N.E., Cedar Rapids, Iowa  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York City,  
N. Y.  
Lewistown Fdy. & Machine  
Co., 16 Elizabeth, Lewis-  
town, Penn.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Lippmann Eng. Works, 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
Mathews Conveyor Co., 10th  
St., Ellwood City, Penn.  
N. P. Nelson Iron Works,  
Inc., 820 Bloomfield Ave.,  
Clifton, N. J.  
New Holland Machine Co.,  
100 Franklin St., New Hol-  
land, Penn.  
Noble Co., 1850 7th St., Oak-  
land 7, Calif.  
Pioneer Engineering Works,  
Inc., 1515 Central Ave.,  
Minneapolis 13, Minn.  
Robins Conveyors, Inc., 270  
Passaic Ave., Passaic, N. J.  
Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo.  
Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.  
Trowbridge Conveyor Co.,  
750 Van Houten Ave., Clif-  
ton, N. J.  
Universal Engineering Corp.,  
625 C Ave., W., Cedar Rap-  
ids, Iowa  
Wisconsin Foundry & Ma-  
chine Co., 623 E. Main St.,  
Madison 1, Wis.

## CONVEYORS, Rotary

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Hardinge Co., Inc., 240 Arch  
St., York, Penn.  
Lewistown Foundry & Ma-  
chine Co., 16 Elizabeth,  
Lewistown, Penn.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.

## CONVEYORS, Screw

Allen Cone & Mach'y. Corp.,  
120 Broadway, New York  
5, N. Y.  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Alpha Tank & Sheet Metal  
Mfg. Co., 5001 S. 38th St.,  
St. Louis 16, Mo.  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill.  
Bethlehem Foundry & Ma-  
chine Co., 225 W. 2nd St.,  
Bethlehem, Penn.  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Fran-  
cisco 24, Calif.  
Brady Conveyors Corp., Chi-  
cago, Ill.  
L. Burnmaster Co., 3225 W.  
Burnham St., Milwaukee  
4, Wis.  
Butler Bin Co., Box 407,  
Waukesha, Wis.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis.  
Chicago Steel Foundry Co.,  
3720 S. Kedzie Ave., Chi-  
cago 32, Ill.  
The Columbus Conveyor Co.,  
869 W. Goodale St., Col-  
umbus, Ohio  
Continental Gin Co., Indus-  
trial Div., 4500 5th Ave.  
So., Birmingham, Ala.  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles  
11, Calif.  
Eagle Iron Wks., 129 Hol-  
comb Ave., Des Moines,  
Iowa  
Gifford-Wood Co., Hudson,  
N. Y.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
C. S. Johnson Co., P.O. Box  
71, Champaign, Ill.  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York City,  
N. Y.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Lippmann Eng. Wks., 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
The McNally-Pittsburg Mfg.  
Corp., Pittsburg, Kan.  
Morrow Mfg. Co., 722 E.  
Tenth St., Wellston, Ohio  
D. J. Murray Mfg. Co.,  
Wausau, Wis.  
Noble Co., 1850 7th St., Oak-  
land 7, Calif.  
Screw Conveyor Corp., 700  
Hoffman St., Hammond,  
Ind.  
Sprout Waldron & Co.,  
Muncy, Penn.  
Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.  
Sturtevant Mill Co., 103 Clay-  
ton St., Dorchester, Boston  
22, Mass.  
Webster Manufacturing, Inc.,  
Tiffin, Ohio

## CONVEYORS, Shaking

Ajax Flexible Coupling Co.,  
Inc., 2 English St., West-  
field, N. Y.  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
Continental Gin Co., Indus-  
trial Div., 4500 5th Ave.  
So., Birmingham, Ala.  
Goodman Mfg. Co., 4834 S.  
Halsted, Chicago 9, Ill.  
Hendrick Mfg. Co., 39 Dun-  
gannon St., Carbondale, Penn.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Lippmann Eng. Wks., 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.

Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y.  
Simplicity Engr. Co., 213 S.  
Oak St., Durand, Mich.  
Standard Transmission  
Equipment Co., 3407 Ver-  
dugo Rd., Los Angeles 41,  
Calif.  
Vulcan Iron Works, 730 S.  
Main St., Wilkes-Barre,  
Penn.  
Webster Mfg., Inc., Tiffin,  
Ohio

## CONVEYORS, Vibrating, Electric

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Productive Equipment Corp.,  
2926 W. Lake St., Chicago  
12, Ill.  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Syntron Co., 450 Lexington  
Ave., Homer City, Penn.

## CONVEYORS, Weighing

Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
Builders-Providence, Inc.,  
9 Coddling St., Providence  
1, R. I.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis.  
Hardinge Co., Inc., 240 Arch  
St., York, Penn.  
Howe Scale Co., Rutland, Vt.  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.  
Mathews Conveyor Co., 10th  
St., Ellwood City, Penn.  
Merrick Scale Mfg. Co., 180-  
186 Autumn St., Passaic,  
N. J.  
Richardson Scale Co., Clif-  
ton, N. J.  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Schaffer Poldometer Co., 2828  
Smallman St., Pittsburgh  
22, Penn.  
Syntron Co., 450 Lexington  
Ave., Homer City, Penn.  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio

## COOLERS, Cement

Fuller Co., Fuller Bldg., Cat-  
asaqua, Penn.  
Hardinge Co., Inc., 240 Arch  
St., York, Penn.  
Nordberg Process Machinery  
Co., Cleveland, Ohio  
F. L. Smith & Co., 60 E.  
42nd St., New York 14,  
N. Y.

## COOLERS, Cement Clinker, Lime, Etc., Air Quench- ing, Rotary

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
C. O. Bartlett & Snow Co.,  
6250 Harvard Ave., Cleve-  
land, Ohio  
The Bonnot Co., Mulberry  
Rd. S.E., Canton, Ohio  
Cement Mill Equipment Co.,  
9718 Otsego Ave., Detroit,  
Mich.  
L. R. Christie Co., 17 E. 42nd  
St., New York, N. Y.  
Conveyor Co., Inc., 3260 E.  
Slauson Ave., Los Angeles  
11, Calif.  
Ehrman Co., 203 Continental  
Bank Bldg., Salt Lake City,  
Utah  
Fuller Co., Fuller Bldg., Cat-  
asaqua, Penn.  
Hardinge Co., Inc., 240 Arch  
St., York, Penn.



Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York City, N. Y. 10 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1 McGann Mfg. Co., P. O. Box 1187, York, Penn. 173 Manitowoc Eng. Works, Manitowoc, Wis. 36 Nordberg Process Machinery Co., Cleveland, Ohio Ruggles-Coles Eng. Co., 122 E. 42nd St., New York, N. Y. F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129 Traylor Eng. & Mfg. Co., Allentown, Penn. 7 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. 8	Kent Machine Co., Cuyahoga Falls, Ohio. 218 Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill. 1 Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill. Prater Pulverizer Co., 1829 S. 55th Ave., Chicago 50, Ill. Sprout Waldron & Co., Muncy, Penn. Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y. T. B. Wood's Sons Co., 1325 5th Ave., Chambersburg, Penn. J. A. Zurn Mfg. Co., 1801 Pittsburgh Ave., Erie, Penn. CRANE, Boom, Cable Stabilizer	Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover The Byers Machine Co., Ravenna, Ohio Detroit Holst & Machine Co., 8201 Morrow St., Detroit 11, Mich. Electric Lift, Inc., 30 Church St., New York 7, N. Y. The Elwell Parker Electric Co., 4205 St. Clair Ave., Cleveland 4, Ohio Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230 Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind. Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. Lima Locomotive Wks., Inc., Shovel & Crane Div., 1106 National Bank Bldg., Lima, Ohio 235 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 199 Manitowoc Engr. Wks., Manitowoc, Wis. 35 The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 The Osgood Co., Marion, Ohio The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3 The Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.	Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif. The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3 CRANES, Hammer Head, Ship, etc. Clyde Iron Works Inc., 29th Ave. W., & Michigan St., Duluth 1, Minn. Dobbie Foundry & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y. Dravo Corp., Neville Island, Pittsburgh 25, Penn. Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y. The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Northwest Engineering Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 Wellman Engineering Co., 7000 Central Ave., Cleveland 4, Ohio 231
CORN CRIB BLOCK AND TILE MACHINES, Concrete Besser Mfg. Co., Alpena, Mich. 211 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich. Multiplex Concrete Machinery Co., Elmore, Ohio 217 Stearns Mfg. Co., Inc., Adrian, Mich. 208 CORRECTING BASINS, Slurry, Etc. The Dorr Co., Inc., 570 Lexington Ave., New York 22, N. Y. 193 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129 COUPLINGS, Flexible (See Flexible Couplings)	Industrial Brownhoist Corp., 135 Washington, Bay City, Mich. 230 McCaffrey-Ruddock Tagline Corp., 2121 E. 25th St., Los Angeles, Calif. Pacific Car & Foundry Co., 4th & Factory St., Renton, Wash. CRANES (Crawler, Locomotive, Truck-Mounted); Diesel American Holst & Derrick Co., 63 South Robert St., St. Paul 1, Minn. Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53 Bay City Shovels, Inc., 2511 Center Ave., Bay City, Mich. Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover The Byers Machine Co., Ravenna, Ohio General Excavator Co., Cheney St., Marion, Ohio 46 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Hyster Co., 2938 N. E. Clackamas, Portland 8, Ore. Gar Wood Industries, 7924 Riopelle St., Detroit 11, Mich. Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230 Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind. Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256 Lima Locomotive Wks., Inc., Shovel & Crane Div., 1106 National Bank Bldg., Lima, Ohio 235 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 199 Manitowoc Engr. Wks., Manitowoc, Wis. 35 The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Michigan Power Shovel Co., 2nd & Miller Blvd., Benton Harbor, Mich. Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo. Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 Ohio Locomotive Crane Co., Bucyrus, Ohio The Osgood Co., Marion, Ohio Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif. The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3	CRANES (Crawler, Locomotive, Truck-Mounted); Gasoline American Holst & Derrick Co., 63 South Robert St., St. Paul 1, Minn. Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53 Bay City Shovels, Inc., 2511 Center Ave., Bay City, Mich. Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover The Byers Machine Co., Ravenna, Ohio General Excavator Co., Cheney St., Marion, Ohio 46 Hanson Clutch & Mch. Co., Tiffin, Ohio Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Hyster Co., 2938 N. E. Clackamas, Portland 8, Ore. Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230 Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind. Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256 Lima Locomotive Wks., Inc., Shovel & Crane Div., 1106 National Bank Bldg., Lima, Ohio 235 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 199 Manitowoc Engr. Wks., Manitowoc, Wis. 35 The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Michigan Power Shovel Co., 2nd & Miller Blvd., Benton Harbor, Mich. Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 Ohio Locomotive Crane Co., Bucyrus, Ohio The Osgood Co., Marion, Ohio Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif. The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3	CRANES, Overhead Bridge Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif. Chisholm-Moore Holst Corp., Fremont Ave., Tonawanda, N. Y. The Cleveland Crane & Engr. Co., Wickliffe, Ohio Columbus McKinnon Chain Corp., Tonawanda, N. Y. The Conco Engr. Wks., Rock Ave., Mendota, Ill. Curt's Pneumatic Machy., Inc., 1988 Klien Ave., St. Louis, Mo. Detroit Holst & Machine Co., 8201 Morrow Ave., Detroit 11, Mich. Dravo Corp., Neville Island, Pittsburgh 25, Penn. Electro Lift, Inc., 30 Church St., New York 7, N. Y. Erie Steel Construction Co., 19th & Geist Road, Erie, Penn. 204 Ford Chain Block Div., American Chain & Cable Co., 2nd & Diamond Sts., Philadelphia 25, Penn. Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash. Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill. 169 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill. Wright Mfg. Div., American Chain & Cable Co., York, Penn.
COUPLINGS, Shaft, Flexible Shaft Ajax Flexible Coupling Co., 2 English St., Westfield, N. Y. American Flexible Couplings Co., 1801 Pittsburgh Ave., Erie, Penn. Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif. Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223 Continental Gin Co., Industrial Div., 4500 5th Ave. So., Birmingham, Ala. 233 Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind. Dresser Mfg. Div., Dresser Industries, Inc., 41 Fisher Ave., Bradford, Penn. The Flori Pipe Co., 629 E. Red Bud St., St. Louis, Mo. Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill. Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6 T. B. Wood's Sons Co., 1325 Fifth Ave., Chambersburg, Penn.	CRANES (Crawler, Locomotive, Truck-Mounted); Electric Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53 Bay City Shovels, Inc., 2511 Center Ave., Bay City, Mich. Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover The Byers Machine Co., Ravenna, Ohio General Excavator Co., Cheney St., Marion, Ohio 46 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Hyster Co., 2938 N. E. Clackamas, Portland 8, Ore. Gar Wood Industries, 7924 Riopelle St., Detroit 11, Mich. Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230 Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind. Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256 Lima Locomotive Wks., Inc., Shovel & Crane Div., 1106 National Bank Bldg., Lima, Ohio 235 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 199 Manitowoc Engr. Wks., Manitowoc, Wis. 35 The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Michigan Power Shovel Co., 2nd & Miller Blvd., Benton Harbor, Mich. Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo. Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 Ohio Locomotive Crane Co., Bucyrus, Ohio The Osgood Co., Marion, Ohio Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif. The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3	CRANES (Crawler, Locomotive, Truck-Mounted); Gasoline American Holst & Derrick Co., 63 South Robert St., St. Paul 1, Minn. Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53 Bay City Shovels, Inc., 2511 Center Ave., Bay City, Mich. Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover The Byers Machine Co., Ravenna, Ohio General Excavator Co., Cheney St., Marion, Ohio 46 Hanson Clutch & Mch. Co., Tiffin, Ohio Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30 Hyster Co., 2938 N. E. Clackamas, Portland 8, Ore. Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230 Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind. Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256 Lima Locomotive Wks., Inc., Shovel & Crane Div., 1106 National Bank Bldg., Lima, Ohio 235 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 199 Manitowoc Engr. Wks., Manitowoc, Wis. 35 The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191 Michigan Power Shovel Co., 2nd & Miller Blvd., Benton Harbor, Mich. Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12 Ohio Locomotive Crane Co., Bucyrus, Ohio The Osgood Co., Marion, Ohio Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif. The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3	CRANES, Tractor Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis. 24 American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind. Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53 The Browning Crane & Shovel Co., 16226 Waterloo Rd., N.E., Cleveland, Ohio Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio The Elwell Parker Electric Co., 4205 St. Clair Ave., Cleveland 14, Ohio Gar Wood Industries, Inc., 7924 Riopelle St., Detroit 11, Mich. The General Excavator Co., Cheney St., Marion, Ohio. 46 The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill. Hughes-Keenan Co., P.O. Box 398, Mansfield, Ohio Hyster Co., 2902 N. E. Clackamas Street, Portland 8, Oregon

# DIRECTORY

Inaley Mfg. Co., 801 N. Olney St., Indianapolis, Ind.  
Lima Locomotive Wks. Inc., Shovel & Crane Division, 1108 National Bank Bldg., Lima, Ohio  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.  
Manitowoc Engr. Works, Manitowoc, Wis.  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill.  
The Osgood Co., Cheney St., Marion, Ohio  
Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.

## CRAWLER ATTACHMENTS

Allied Steel Products, Inc., 1721 NBC Bldg., Cleveland 14, Ohio

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.

Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.

Caterpillar Tractor Co., W. Washington, Peoria 8, Ill.

The General Excavator Co., Cheney St., Marion, Ohio

Inaley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

Kensington Steel Co., 505 Kensington Ave., Chicago, Ill.

Koehring Co., 3025 W. Concordia Ave., Milwaukee 10, Wis.

Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.

Manitowoc Engr. Works, Manitowoc, Wis.

Michigan Power Shovel Co., Second & Miller Blvd., Benton Harbor, Mich.

The Osgood Co., Cheney St., Marion, Ohio

Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.

## CRIBBING FORMS

Price Bros. Co., Box 825, Dayton, Ohio

## CRIMPERS, BLASTING CAP (See Blasting Supplies)

## CRUSHED STONE PLANTS Complete

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill.

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.

Butler Bin Co., Box 407, Waukesha, Wis.

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.

Dixie Machinery Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo.

Greenville Mfg. Wks., Greenville, Ohio

Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.

Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo.

Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa

Henry J. Kalsner Co., Latham Square Bldg., Oakland 12, Calif.

Fred T. Kern Co., P.O. Box 2057, Milwaukee 1, Wis.

Lippmann Engr. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.

Maddox Foundry & Machine Works, Archer, Fla.

Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio

New Holland Machine Co., 100 Franklin St., New Holland, Penn.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.

Pioneer Engr. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo.

Smith Eng. Works, 532 E. Capitol Drive, Milwaukee 12, Wis.

Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Strub Mfg. Co., 507 Chestnut, Oakland 7, Calif.

Traylor E. Jr. & Mfg. Co., Allentown, Penn.

Universal Engr. Corp., 625 C Ave. W., Cedar Rapids, Iowa

Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y.

Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo.

Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## CRUSHER PARTS

Allied Steel Products, Inc., 1721 NBC Bldg., Cleveland 14, Ohio

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Alloy Steel & Metals Co., 1862 E. 55th St., Los Angeles, Calif.

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.

American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo.

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.

C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio

Birdsboro Steel Foundry & Machine Co., 1941 Furnace St., Birdsboro, Penn.

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.

Dixie Machinery Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo.

Eagle Crusher Co., Inc., 900 Harding Way East, Galion, Ohio

Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.

The Frog Switch & Mfg. Co., Carlisle, Penn.

Gilson Bros. Co., Fredonia, Wis.

Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo.

Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif.

Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa

Lippmann Engr. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.

Maddox Foundry & Machine Works, Archer, Fla.

New Holland Machine Co., 100 Franklin St., New Holland, Penn.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.

Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.

Pioneer Engr. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo.

Smith Engr. Wks., 532 E. Capitol Drive, Milwaukee 12, Wis.

Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.

Taylor-Wharton Iron and Steel Co., High Bridge, N. J.

Traylor Eng. & Mfg. Co., Allentown, Penn.

Universal Engr. Corp., 625 C Ave. W., Cedar Rapids, Iowa

Western Machy. Co., 760 Folsom Street, San Francisco, Calif.

Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo.

Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## CRUSHERS, Gyratory

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Alloy Steel & Metals Co., 1862 E. 55th St., Los Angeles, Calif.

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill.

C. G. Buchanan Co., Inc., 1501 Broadway, New York, N. Y.

Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.

Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

Morse Bros. Mchy. Co., 2900 Broadway, Denver 1, Colo.

New Holland Machine Co., 100 Franklin St., New Holland, Penn.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.

W. A. Riddell Corp., Bucyrus, Ohio

Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Smith Engineering Works, 532 E. Capitol Dr., Milwaukee 12, Wis.

The Stearnes-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.

Straub Mfg. Co., 507 Chestnut St., Oakland 17, Calif.

Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Traylor Engr. & Mfg. Co., Allentown, Penn.

Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y.

Western Mchy. Co., 760 Folsom Street, San Francisco, Calif.

## CRUSHERS, Hammer

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Brooks Equipment & Mfg. Co., 406 Davenport Road, Knoxville, Tenn.

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.

Dixie Machinery Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo.

Eagle Crusher Co., Inc., 900 Harding Way East, Galion, Ohio

Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.

Gilson Bros. Co., Fredonia, Wis.

Gruendler Crusher & Pulv. Co., 2915-17 N. Market St., St. Louis, Mo.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio

Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.

Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

Lippmann Engr. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.

Multiplex Concrete Machinery Co., Elmore, Ohio

D. J. Murray Mfg. Co., Wausau, Wis.

New Holland Machine Co., 100 Franklin St., New Holland, Penn.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.

Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn.

Prater Pulverizer Co., 1825 S. 55th Ave., Chicago 50, Ill.

Raymond Pulverizer Div., Combustion Engr. Co., Inc., 1319 N. Branch St., Chicago 22, Ill.

W. A. Riddell Corp., Bucyrus, Ohio

Stearns Mfg. Co., Inc., Adrian, Mich.

Stedman's Fdy. & Machine Wks., Aurora, Ind.

Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Universal Engr. Corp., 625 C Ave. W., Cedar Rapids, Iowa

Vulcan Iron Wks., 730 S. Main Street, Wilkes-Barre, Penn.

Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo.

## CRUSHERS, Impact

Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa

New Holland Machine Co., 100 Franklin St., New Holland, Penn.

Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.

Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia, Penn.

Stedman's Foundry & Machine Works, Aurora, Ind.

## CRUSHERS, Jaw

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Alloys Steel & Metals Co., 1862 E. 55th St., Los Angeles 11, Calif.

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill.

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill.

C. G. Buchanan Co., Inc., 1501 Broadway, New York, N. Y.	Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.	Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Min- neapolis 11, Minn. .... 247	Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa... 166
Colorado Iron Works Co., 1624 17th St., Denver 2, Colo.	The Gallagher Co., 48 South Second East St., Salt Lake City 1, Utah	Eagle Iron Works, 129 Hol- comb, Des Moines, Iowa... 205	The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51
Denver Equipment Co., 1400 17th St., Denver 17, Colo... 31	Gruendler Crusher & Pulver- izer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177	The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah	Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Min- neapolis 11, Minn. .... 247	The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51	Greenville Mfg. Wks., Green- ville, Ohio	Lippmann Eng. Works, 4603 W. Mitchell St., Milwau- kee, Wis.
Eagle Crusher Co., Inc., 900 Harding Way East, Gallon, Ohio ..... 25	Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11	Groch Eng. Co., 628 W. 9th St., Los Angeles 15, Calif.	Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio
The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah	The Mine & Smelter Supply P. O. Box 5270, Terminal Station, Denver 17, Colo.	Gruendler Crusher & Pulver- izer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177	Pioneer Eng. Works, Inc., 1515 Central Ave., Minne- apolis 13, Minn. .... 227
Farrel-Birmingham Co., Inc., Ansonia, Conn.	Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.	Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa... 166	Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6
Good Roads Machinery Corp., Kennett Square, Penn.	Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. .... 200	The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51	Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.	The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.	Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11	CULVERT PIPE MACHIN- ERY & MOLDS, Concrete
Gruendler Crusher & Pulver- izer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177	Straub Mfg. Co., 507 Chest- nut, Oakland 7, Calif.	Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.	Concrete Pipe Mch. Co., 9th & Division, Sioux City, Iowa
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif... 47	Sturtevant Mill Co., 103 Clay- ton St., Dorchester, Boston 22, Mass. .... 39	Link-Belt Co., 300 W. Per- shing Rd., Chicago 9, Ill... 1	Lock Joint Pipe Co., 150 Rut- ledge Ave., E. Orange, N. J.
Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa... 166	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7	Lippmann Eng. Wks., 4603 W. Mitchell St., Milwau- kee 14, Wis.	Quinn Wire & Iron Wks., Boone, Iowa
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51	Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa	McLanahan & Stone Corp., 200 Wall St., Hollidays- burg, Penn. .... 45	Universal Concrete Pipe Co., 297 S. High St., Columbus, Ohio
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11	Western Mch. Co., 760 Fol- som St., San Francisco, Calif.	Maddox Foundry & Machine Wks., Archer, Fla.	CUPOLAS, Rock Wool (See Rock Wool Cupolas and Equipment)
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.	Williams Patent Crusher & Pulv. Co., 2701 N. Broad- way, St. Louis 6, Mo. .... 29	The Mine & Smelter Supply Co., P.O. Box 5270, Ter- minal Station, Denver 17, Colo.	CURB FORMS, Concrete
Kent Mill Co., 10 Rapelye Street, Brooklyn 31, New York, N. Y.	CRUSHERS, Ring	Multiplex Concrete Mch. Co., Elmore, Ohio ..... 217	Blaw-Knox Co., Blawnox, Penn. .... 245
Lewistown Foundry & Ma- chine Co., 16 Elizabeth, Lewistown, Penn.	American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo. .... 37	New Holland Machine Co., 100 Franklin St., New Hol- land, Penn. .... 226	Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio
Lippmann Engr. Wks., 4603 W. Mitchell St., Milwau- kee 14, Wis.	Dixie Machinery Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo. .... 195	Pennsylvania Crusher Co., Liberty Trust Bldg., Phila- delphia 7, Penn. .... 92	The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio
McLanahan & Stone Corp., 200 Wall St., Hollidays- burg, Penn. .... 45	Gruendler Crusher & Pulver- izer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177	Pioneer Eng. Works, Inc., 1515 Central Ave., Minne- apolis 13, Minn. .... 227	Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.	The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51	Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.	Truscon Steel Co., Albert St., Youngstown, Ohio
Nordberg Mfg. Co., 3073 So. Chase Ave., Milwaukee 7, Wis. .... 34	Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y., 10, 11	Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. .... 200	CURING COMPOUNDS, Concrete
Pioneer Eng. Works, Inc., 1515 Central Ave., Minneap- olis 13, Minn. .... 227	Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.	Smith Eng. Works, 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56	American Fluoresit Co., Inc., 635 Rockdale Ave., Cin- cinnati 29, Ohio
W. A. Riddell Corp., Bucy- rus, Ohio	Kent Mill Co., 10 Rapelye St., Brooklyn, N. Y.	Stearns Mfg. Co., Inc., Ad- rian, Mich. .... 206	Dewey & Almy Chem. Co., 62 Whittemore Ave., Cam- bridge 40, Mass.
Rogers Iron Wks., Co., 11th & Pearl, Joplin, Mo. .... 200	Pennsylvania Crusher Co., Liberty Trust Bldg., Phila- delphia 7, Penn. .... 92	Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6	E. I. DuPont de Nemours & Co., Inc., Nemours Bldg., Wilmington 98, Del. .... 57
Smith Engr. Works, 532 E. Capitol Drive, Milwaukee 12, Wis. .... 56	Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.	Stroh Process Steel Co., 1428 High St., Pittsburgh, Penn.	Harshaw Chemical Co., Cleve- land, Ohio
Stearns Mfg. Co., Inc., Ad- rian, Mich. .... 206	Stearns' Fdy. & Machine Wks., Aurora, Ind.	Sturtevant Mill Co., 103 Clay- ton St., Dorchester, Boston 22, Mass. .... 39	Michigan Alkali Corp., Ford Bldg., Detroit, Mich.
The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.	Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7	Solvay Sales Corp., 40 Rector St., New York 6, N. Y.
Straub Mfg. Co., 507 Chest- nut St., Oakland 7, Calif.	Sturtevant Mill Co., 103 Clay- ton St., Dorchester, Boston 22, Mass. .... 39	Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa	CUTTER-HEADS, Dredging
Stroh Process Steel Co., 1428 High St., Pittsburgh, Penn.	Williams Patent Crusher & Pulv. Co., 2701 N. Broad- way, St. Louis 6, Mo. .... 29	Vulcan Iron Works, 730 S. Main Street, Wilkes-Barre, Penn.	American Manganese Steel Div. of American Brake Shoe Co., 339 E. 14th St., Chicago Heights, Ill. .... 201
Sturtevant Mill Co., 103 Clay- ton St., Dorchester, Boston 22, Mass. .... 39	CRUSHERS, Roll	The Webb Corp., 402 E. Broadway, Webb City, Mo.	American Steel Dredge Co., Inc., 2500 Taylor St., Ft. Wayne, Ind.
Traylor Engr. & Mfg. Co., Allentown, Penn. .... 7	Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.	Williams Patent Crusher & Pulv. Co., 2701 N. Broad- way, St. Louis 6, Mo. .... 29	Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis.
Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa	Alloys Steel & Metals Co., 1862 E. 55th St., Los An- geles, Calif.	Wisconsin Foundry & Ma- chine Co., 623 E. Main St., Madison 1, Wis.	Eagle Iron Works, 129 Hol- comb Ave., Des Moines, Iowa ..... 205
Universal Road Machinery Co., 27 Emerick St., King- ston, N. Y. .... 239	Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. .... 53	CRUSHING AND SCREEN- ING PLANTS, Portable	The Frog Switch & Mfg. Co., Carlisle, Penn. .... 243
The Webb Corp., 402 E. Broadway, Webb City, Mo.	Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244	American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo. .... 37	Georgia Iron Wks., 605 Twelfth St., Augusta, Ga.
Wisconsin Foundry & Ma- chine Co., 623 E. Main, Madison 1, Wis.	Birdsboro Steel Foundry & Machine Co., 1941 Furnace St., Birdsboro, Penn.	Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. .... 53	Greenville Mfg. Works, Greenville, Ohio
CRUSHERS, Laboratory	Bonded Scale Co., 128 Bell- view, Columbus 7, Ohio	Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244	Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif... 47
Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.	The Bonnot Co., Mulberry Rd., S.E. Canton, Ohio	Bodinson Mfg. Co., 2401 Bay- shore Blvd., San Francisco, Calif.	Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.
American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo. .... 37	C. G. Buchanan Co., Inc., 1501 Broadway, New York, N. Y.	Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Min- neapolis 11, Minn. .... 247	Millville Iron Works, Inc., Sixth St. & Florence Ave., Millville, N. J.
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244	Colorado Iron Works Co., 1624 17th St., Denver 2, Colo.	Eagle Crusher Co., Inc., 900 Harding Way, East, Gallon, Ohio ..... 25	Morris Machine Works, Bald- winsville, N. Y.
Birdsboro Steel Foundry & Machine Co., 1941 Furnace St., Birdsboro, Penn.		Erie Steel Construction Co., Box 1031, Erie, Penn. .... 204	
Burrell Technical Supply Co., 1336-1942 Fifth Ave., Pittsburgh, Penn.		Gruendler Crusher & Pulver- izer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177	
Denver Equipment Co., 1400 17th St., Denver 17, Colo... 31			



# DIRECTORY

Pettibone Mulliken Corp.,  
4719 W. Division St., Chi-  
cago 51, Ill.  
Taylor-Wharton Iron and  
Steel Co., High Bridge,  
N. J. 16

CUTTERS, Fuse (see Blast-  
ing Supplies)

CUTTING WHEELS, Abras-  
ives for Concrete

The Carborundum Co., Nila-  
ga Falls, N. Y.

## DEDUSTERS

The Ducon Co., 259 Norman  
Ave., Brooklyn 22, N. Y.  
Pangborn Corp., 120 Pang-  
born Blvd., Hagerstown,  
Md.

Parsons Eng. Corp., 2545 E.  
79th St., Cleveland 4, Ohio 55  
Separations Eng. Corp., 110  
E. 42nd St., New York 17,  
N. Y.

The W. W. Sly Mfg. Co.,  
4700 Train Ave., Cleveland  
2, Ohio

DEHYDRATORS (see also  
Centrifuges, Thickeners,  
etc.)

Allen Cone & Machy. Corp.,  
120 Broadway, New York  
5, N. Y.

Bird Machine Co., S. Wal-  
pole, Mass. 130

Denver Equipment Co., 1400  
17th St., Denver, Colo. 31

Dorr Co., 570 Lexington Ave.,  
New York 22, N. Y. 193

Eagle Iron Wks., 129 Hol-  
comb Ave., Des Moines,  
Iowa 206

Hardinge Co., Inc., 240 Arch  
St., York, Penn. 225

Jackson & Church Co., 321  
N. Hamilton St., Saginaw,  
Mich. 215

Pioneer Eng. Works, Inc.,  
1515 Central Ave., Minne-  
apolis 13, Minn. 227

Productive Equipment Corp.,  
2926 W. Lake St., Chicago  
12, Ill.

F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y. 125, 129

Western Machinery Co., 760  
Folsom St., San Francisco,  
Calif.

DERRICKS, Barge

American Holst & Derrick  
Co., 63 S. Robert St., St.  
Paul 1, Minn.

American Steel Dredge Co.,  
Inc., 2500 Taylor St., Ft.  
Wayne, Ind.

Bethlehem Steel Co., Bethle-  
hem, Penn. 22

Clyde Iron Works Inc., 29th  
Ave. W. & Michigan St.,  
Duluth 1, Minn.

Dobbie Foundry & Machine  
Co., 146-170 Portage Rd.,  
Niagara Falls, N. Y.

Dravo Corp., Neville Island,  
Pittsburgh 25, Penn.

McKernan - Terry Co., 15  
Park Row, New York 7,  
N. Y.

Manitowoc Eng. Works,  
Manitowoc, Wis. 35

Meckum Eng., Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.

Morrow Mfg. Co., 722 E.  
Tenth St., Wellston, Ohio

Pacific Car & Fdry. Co., 4th  
and Factory St., Renton,  
Wash.

DERRICKS, Stiff-Leg and  
Guy

American Holst & Derrick  
Co., 63 S. Robert St., St.  
Paul 1, Minn.

Clyde Iron Works Inc., 29th  
Ave. W. & Michigan St.,  
Duluth 1, Minn.

Dobbie Foundry & Machine  
Co., 146-170 Portage Rd.,  
Niagara Falls, N. Y.

Insley Mfg. Co., 801 N. Ol-  
ney St., Indianapolis, Ind.

McKernan-Terry Corp., 15  
Park Row, New York 7,  
N. Y.

Maddox Fdry. & Machine  
Wks., Archer, Fla.

Morse Bros. Mch. Co., 2900  
Broadway, Denver 1, Colo.

Pacific Car & Fdry. Co., 4th  
and State St., Renton,  
Wash.

The Sasgen Derrick Co.,  
3101-27 W. Grand Ave.,  
Chicago 22, Ill.

Street Brothers Machine Co.,  
415 Ochs Bldg., Chatta-  
nooga 2, Tenn.

DETONATORS (see Blasting  
Caps, Blasting Supplies)

DEWATERING EQUIPMENT,  
Sand

Allen Cone & Mch. Corp.,  
120 Broadway, New York 5,  
N. Y.

Allis-Chalmers Mfg Co., 1945  
Prodor St., Milwaukee 1,  
Wis.

Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.

Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244

C. H. & E. Mfg. Co., 3849  
N. Palmer St., Milwaukee  
12, Wis.

Colorado Iron Wks. Co., 1624  
17th St., Denver 2, Colo.

Deister Machine Co., 193 E.  
Wayne St., Ft. Wayne 4,  
Ind. 228

Denver Equipment Co., 1400  
St. Denver 17, Colo. 31

Diamond Iron Works, Inc.,  
and The Mahr Mfg. Co.,  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn. 247

Dorr Co., 570 Lexington Ave.,  
New York 22, N. Y. 193

The Ducon Co., 259 Norman  
Ave., Brooklyn 22, N. Y.

Eagle Iron Works, 129 Hol-  
comb Ave., Des Moines, Ia. 206

The Elmco Corp., P. O. Box  
300, Salt Lake City 8, Utah

Greenville Mfg. Works,  
Greenville, Ohio

Hardinge Co., Inc., 240 Arch  
St., York, Penn. 225

Iowa Mfg. Co., 916 16th St.,  
N.E., Cedar Rapids, Iowa. 166

The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51

Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York, N. Y. 10, 11

Fred T. Kern Co., P. O. Box  
2057, Milwaukee 1, Wis.

Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1

McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45

Meckum Eng. Inc., 53 W.  
Jackson Blvd., Chicago 4,  
Ill.

Millville Iron Works, Inc.,  
Sixth St. & Florence Ave.,  
Millville, N. J.

Morrow Mfg. Co., 722 E. 10th  
St., Wellston, Ohio

Pioneer Eng. Works, Inc.,  
1515 Central Ave., Minne-  
apolis 13, Minn. 227

Productive Equipment Corp.,  
2926 W. Lake St., Chicago  
12, Ill.

Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo. 200

Simplicity Engr. Co., 213 S.  
Oak St., Durand, Mich. 32

Smith Engr. Works, 532 E.  
Capitol Dr., Milwaukee 12,  
Wis. 56

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6

F. M. Welch Eng. Service,  
Greenville, Ohio

Western Mch. Co., 760 Fol-  
som St., San Francisco,  
Calif.

DIAPHRAGMS, Pumps,  
Rubber

The American Rubber Mfg.  
Co., 1145 Park Ave., Oak-  
land 8, Calif.

Ralph B. Carter Co., Mark-  
ley-Carter Dust Collector  
Div., 196 Atlantic St.,  
Hackensack, N. J.

C. H. & E. Mfg. Co., 3849  
N. Palmer St., Milwaukee  
12, Wis.

Construction Machinery Co.,  
Glenwood & Vinton St.,  
Waterloo, Iowa

Continental Rubber Works,  
1902 Liberty St., Erie,  
Penn.

Denver Equipment Co., 1400  
17th St., Denver 17, Colo. 81

The Dorr Co., 570 Lexington  
Ave., New York 22, N. Y. 193

The Galigher Co., 48 South  
Second East St., Salt Lake  
City 1, Utah.

The Gates Rubber Co., 999  
S. Broadway, Denver 17,  
Colo. 44

Goodall Rubber Co., Inc., 5  
So. 38th St., Philadelphia  
4, Penn.

The Goodyear Tire & Rubber  
Co., Inc., 1144 E. Market,  
Akron, Ohio. 9

Hardinge Co., Inc., 240 Arch  
St., York, Penn. 225

Hewitt Rubber Corp., 240  
Kensington Ave., Buffalo,  
N. Y.

Jaeger Machine Co., 550 W.  
Spring St., Columbus 16,  
Ohio 23

Kadco Corp., 35-40 Eleventh  
St., Long Island City, N. Y.  
(Subsidiary of Complete  
Machinery & Equipment Co.)

The Manhattan Rubber Mfg.  
Div. of Raybestos-Man-  
hattan Inc., 61 Willett St.,  
Passaic, N. J. 13

Novo Engine Co., 702 Porter  
St., Lansing, Mich.

Oliver United Filters, Inc.,  
33 W. 42nd St., New York  
18, N. Y.

Quaker Rubber Corp., Comly  
& Milnor Sts., Philadel-  
phia 24, Penn. 171

Republic Rubber Division,  
Lee Rubber & Tire Corp.,  
Youngstown, Ohio 165

United States Rubber Co.,  
1230 6th Ave., New York 20,  
N. Y.

Western Machinery Co., 760  
Folsom St., San Francisco,  
Calif.

## DIFFERENTIAL

(Special, Motor Truck)  
See Motor Truck Drives  
& Differential Special

## DIESEL ENGINES, Automotive

The Buda Co., 15401 Com-  
mercial Ave., Harvey, Ill. 33

Caterpillar Tractor Co., W.  
Washington, Peoria 8, Ill.

The Cooper-Bessemer Corp.,  
Sandusky St., Mt. Vernon,  
Ohio

Cummins Engine Co., 5th &  
Wilson St., Columbus, Ind. 20, 21

Detroit Diesel Engine Div.  
General Motors Corp.,  
13400 W. Outer Drive, De-  
troit 23, Mich.

Hercules Motors Corp., 11th  
St. S.E., Canton, Ohio

Mack Trucks Inc., 350 Fifth  
Ave., New York 1, N. Y.

R. H. Sheppard Co., Phila-  
delphia St., Hanover,  
Penn.

Waukesha Motor Co., P. O.  
Box 379, Waukesha, Wis.

DIESEL ENGINES,  
Stationary (Less than  
100 h.p.)

Atlas Imperial Diesel Engine  
Co., 102 New Montgomery  
St., San Francisco 5, Calif.

Bolinders Co., Inc., 33 Rec-  
tor, New York 6, N. Y.

The Buckeye Machine Co.,  
E. O'Connor Ave., Lima,  
Ohio

The Buda Co., 15401 Com-  
mercial Ave., Harvey, Ill. 33

Caterpillar Tractor Co., Peo-  
ria 8, Ill.

Climax Eng. Co., 1812 S. 4th  
St., Clinton, Iowa

Continental Gin Co., Indus-  
trial Div., 4500 8th Ave.  
So., Birmingham, Ala. 233

The Cooper-Bessemer Corp.,  
Sandusky St., Mt. Vernon,  
Ohio

Cummins Engine Co., 5th &  
Wilson St., Columbus, Ind. 20, 21

Detroit Diesel Engine Div.  
General Motors Corp.,  
13400 W. Outer Drive, De-  
troit 23, Mich.

Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.

Hercules Motors Corp., 11th  
St. S.E., Canton, Ohio

International Harvester Co.,  
180 N. Michigan Ave., Chi-  
cago 1, Ill.

Lister-Blackstone Inc., 1706  
S. 68, Milwaukee 14, Wis.

Murphy Diesel Co., 5317 W.  
Burnham St., Milwaukee  
14, Wis.

The National Supply Co.,  
P. O. Box 899, Toledo, Ohio

R. H. Sheppard Co., Phila-  
delphia St., Hanover, Penn.

Waukesha Motor Co., P. O.  
Box 379, Waukesha, Wis.

Weber Engine Co., 1101 Win-  
chester, Kansas City, Mo.

DIESEL ENGINES, Station-  
ary (100 to 500 h.p.)

Atlas Imperial Diesel Engine  
Co., 102 New Montgomery  
St., San Francisco 5, Calif.

Bolinders Co., Inc., 33 Rec-  
tor, New York 6, N. Y.

The Buckeye Machine Co.,  
E. O'Connor Ave., Lima,  
Ohio

The Buda Co., 15401 Com-  
mercial Ave., Harvey, Ill. 33

Busch-Sulzer Bros. Diesel  
Engine Co., 3300 South 2nd  
St., St. Louis 18, Mo.

Caterpillar Tractor Co., Peo-  
ria 8, Ill.

Chicago Pneumatic Tool Co.,  
8 E. 44th St., New York 17,  
N. Y. 40

Continental Gin Co., Indus-  
trial Div., 4500 8th Ave.  
So., Birmingham, Ala. 233

The Cooper-Bessemer Corp.,  
Sandusky St., Mt. Vernon,  
Ohio

Cummins Engine Co., 5th &  
Wilson St., Columbus, Ind. 20, 21

Detroit Diesel Engine Div.  
General Motors Corp.,  
13400 W. Outer Drive, De-  
troit 23, Mich.

Enterprise Engine & Foun-  
dry Co., 18th & Florida St.,  
San Francisco 10, Calif.

Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.

Jesha Hendy Iron Wks.,  
Box 37, Sunnyvale, Calif. 47

Hercules Motors Corp., 11th  
St. S.E., Canton, Ohio

Ingersoll-Rand Co., 11 Broad-  
way, New York 4, N. Y. 42

Murphy Diesel Co., 5317 W.  
Burnham St., Milwaukee  
14, Wis.

The National Supply Co., P.  
O. Box 899, Toledo, Ohio

Waukesha Motor Co., P. O.  
Box 379, Waukesha, Wis.

Worthington Pump & Mch.  
Corp., 744 Broad St., New-  
ark 2, N. J.

DIESEL ENGINES, Station-  
ary (500 to 1000 h.p.)

American Locomotive Co., 30  
Church St., New York,  
N. Y.

Atlas Imperial Diesel Engine  
Co., 102 New Montgomery  
St., San Francisco 5, Calif.

Bolinders Co., Inc., 33 Rec-  
tor, New York 6, N. Y.

The Buckeye Machine Co.,  
E. O'Connor Ave., Lima,  
Ohio

# DIRECTORY

- Busch-Sulzer Bros. Diesel Engine Co., 3300 S. 2nd St., St. Louis 18, Mo.  
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. 40  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Detroit Diesel Engr. Div., General Motors Corp., 13400 W. Outer Drive, Detroit 23, Mich.  
Enterprise Engine & Fdy. Co., 18th & Florida St., San Francisco 10, Calif.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
The National Supply Co., P. O. Box 899, Toledo, Ohio  
Worthington Pump & Mch. Corp., 744 Broad St., Newark 2, N. J.
- DIESEL ENGINES, Stationary (Over 1000 h.p.)**  
American Locomotive Co., 30 Church St., New York, N. Y.  
Bolinders Co., Inc., 33 Rector, New York 6, N. Y.  
Busch-Sulzer Bros. Diesel Engine Co., 3300 S. 2nd St., St. Louis 18, Mo.  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Enterprise Engine & Fdy. Co., 18th & Florida St., San Francisco 10, Calif.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis. 34  
Worthington Pump & Mch. Corp., 744 Broad St., Newark 2, N. J.
- DIESEL-GENERATOR SETS**  
Atlas Imperial Diesel Engine Co., 102 New Montgomery St., San Francisco 5, Calif.  
Bolinders Co., Inc., 33 Rector, New York 6, N. Y.  
The Buckeye Machine Co., E. O'Connor Ave., Lima, Ohio  
The Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
Busch-Sulzer Bros. Diesel Engine Co., 3300 S. 2nd St., St. Louis 18, Mo.  
Caterpillar Tractor Co., Peoria 8, Ill.  
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. 40  
Climax Eng. Co., 1812 S. 4th St., Clinton, Iowa  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Crocker-Wheeler Electric Mfg. Co., Div. of Joshua Hendy Iron Works, Amers, N. J.  
Cummins Engine Co., 5th & Wilson Sts., Columbus, Ind. 20, 21  
Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Drive, Detroit 23, Mich.  
Enterprise Engine & Fdy. Co., 18th & Florida St., San Francisco 10, Calif.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
Later-Blackstone Inc., 1706 S. 65, Milwaukee 14, Wis.  
Murphy Diesel Co., 5317 W. Burnham St., Milwaukee 14, Wis.  
The National Supply Co., P. O. Box 899, Toledo, Ohio
- Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis. 34  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
R. H. Sheppard Co., Philadelphia St., Hanover, Penn.  
Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.  
Waukesha Motor Co., P. O. Box 379, Waukesha, Wis.  
Worthington Pump & Mch. Corp., 744 Broad St., Newark 2, N. J.
- DIPPER TEETH AND PARTS**  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Audubon Wire Cloth Corp., (Subsidiary of Manganese Steel Forge Co.), Richmond St. & Castor Ave., Philadelphia, Penn.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover  
Chicago Steel Fdy. Co., 3720 S. Kedzie Ave., Chicago 32, Ill.  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
The Frog Switch & Mfg. Co., Carlisle, Penn. 243  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Maddox Fdy. & Machine Wks., Archer, Fla.  
Marion Steam Shovel Co., W. Center St., Marion, Ohio 191  
Meekum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
The Osgood Co., Marion, Ohio  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Stutz-Sickles Co., 134 Lafayette St., Newark 5, N. J. (Reprinters)  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 16  
Wisconsin Fdy. & Machine Co., Madison, Wis.
- DIPERS, Dredge & Shovel**  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
The Frog Switch & Mfg. Co., Carlisle, Penn. 243  
General Excavator Co., Cheney St., Marion, Ohio 46  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Meekum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
The Osgood Co., Marion, Ohio  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 16
- DISINTEGRATORS (see Crushers, Mills, Pulverizers)**
- DITCHERS**  
Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 176  
Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.
- Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Hyster Co., 2902 N. E. Clackamus St., Portland 8, Ore.  
Keystone Driller Co., 201 8th Ave., Beaver Falls, Penn.  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189  
Northwest Eng. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12
- DRAFT GAUGES**  
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio  
Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
The Foxboro Co., Neponset Ave., Foxboro, Mass.  
The Hyys Corp., Mich. City, Ind.  
Manning, Maxwell & Moore Inc., 11 Elias St., Bridgeport 2, Conn.
- DRAGLINE CABLEWAY EXCAVATORS**  
American Chain & Cable Co., Inc., Bridgeport, Conn. 58, 3rd cover  
Beaumont Birch Co., 1505 Race St., Philadelphia, Penn.  
Clyde Iron Wks., Inc., 29th Ave. W. & Michigan St., Duluth, Minn.  
Columbia Steel Co., Russ Bldg., San Francisco, Calif.  
Hazard Wire Rope Co., Wilkes-Barre, Penn. 58  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Sauerman Bros., Inc., 530 S. Clinton St., Chicago 7, Ill. 230  
Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.
- DRAGLINES, DIESEL**  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover  
The Byers Machine Co., Ravenna, Ohio  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Enterprise Engine & Fdy. Co., 18th & Florida St., San Francisco 10, Calif.  
The General Excavator Co., Cheney St., Marion, Ohio 46  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind.  
Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256  
Lima Locomotive Wks., Inc. Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189  
Manitowoc Engr. Wks., Manitowoc, Wis. 35  
The Marion Steam Shovel Co., W. Center St., Marion, Ohio 191  
Michigan Power Shovel Co., Second & Miller Blvd., Benton Harbor, Mich.  
Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12  
The Osgood Co., Marion, Ohio  
"Quick-Way" Truck Shovel Co., P. O. Box 1800, Denver, Colo.  
Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 1, Calif.  
Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3
- DRAGLINES, GASOLINE**  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th cover  
Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189  
Manitowoc Engr. Wks., Manitowoc, Wis. 35

# DIRECTORY

The Marion Steam Shovel Co., W. Center St., Marion, Ohio ..... 191  
Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.

## DRAGLINES, STEAM

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. .... 4th cover  
Manitowoc Engr. Wks., Manitowoc, Wis. .... 35  
The Marion Steam Shovel Co., W. Center St., Marion, Ohio ..... 191  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.

## DRAGS, Sand

Allen Cone Mch. Corp., 120 Broadway, New York 5, N. Y.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. .... 223  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Coyle & Roth Co., Inc., 3024 S.E., 4th St., Minneapolis 14, Minn.  
Eagle Iron Works, 129 Holcomb, Des Moines, Iowa ..... 205  
Electric Steel Fdry. Co., 2141 N.W. 25th Ave., Portland 10, Oregon  
Greenville Mfg. Wks., Greenville, Ohio  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Fred T. Kern Co., P.O. Box 2087, Milwaukee 1, Wis.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200  
Smith Engineering Works, 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56  
Wisconsin Fdry. & Machine Co., Madison, Wis.

## DRAIN TILE MACHINES, Concrete

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio ..... 218  
Concrete Equipment Co., Holland, Mich.  
Quinn Wire & Iron Works, Boone, Iowa

## DREDGE PIPE AND FITTINGS (See Also Pipe)

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
American Rolling Mill Co., Curtis Ave., Middletown, Ohio  
American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Birdsboro Steel Fdry. & Machine Co., 1941 Furnace St., Birdsboro, Penn.  
Ellcott Machine Corp., 1611 Bush St., Baltimore, Md.  
The Frog, Switch & Mfg. Co., Carlisle, Penn. .... 243  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. .... 13  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

Morris Machine Works, Baldwinville, N. Y.  
Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.  
Taylor Forge & Pipe Works, Box 485, Chicago, Ill.

## DREDGE PIPE SLEEVES

American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Sta., Cincinnati 12, Ohio ..... 222  
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo. .... 44  
Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn.  
The B. F. Goodrich Co., Akron, Ohio  
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio ..... 9  
Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. .... 13  
Meckum Eng. Co., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. .... 171  
Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio ..... 165  
Thermold Rubber Div. of Thermold Co., Whitehead Road, Trenton 6, N. J.  
United States Rubber Co., 1230 6th Ave., New York 20, N. Y.

## DREDGE PUMPS

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
American-Marsh Pumps, Inc., 205 Capital Ave., Battle Creek, Mich.  
American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
W. H. K. Bennett Co., 57 E. Jackson, Chicago, Ill.  
Birdsboro Steel Fdry. & Machine Co., 1941 Furnace St., Birdsboro, Penn.  
Ellcott Machine Corp., 1611 Bush St., Baltimore, Md.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Georgia Iron Works, 605 Twelfth St., Augusta, Ga.  
Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif.  
Hetherington & Berner, Inc., 701 Kentucky Ave., Indianapolis 7, Ind.  
Kansas City Hay Press Co., 801 Woodsweather, Kansas City, Mo.  
Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago, Ill.  
Millville Iron Works, Inc., Sixth St. & Florence Ave., Millville, N. J.  
Morris Machine Works, Baldwinville, N. Y.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Sterling Machinery Corp., 411 Southwest Blvd., Kansas City, Mo.

## DREDGES (Sand & Gravel) Bucket, Dipper

American Steel Dredge Co., Inc., 2500 Taylor St., Ft. Wayne, Ind.  
Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. .... 4th cover  
Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif. .... 47

Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Manitowoc Eng. Wks., Manitowoc, Wis. .... 35  
Meckum Engrg., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

## DREDGES (Sand & Gravel) Hydraulic

American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. .... 4th cover  
Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif. .... 47  
Hetherington & Berner, Inc., 701 Kentucky Ave., Indianapolis 7, Ind.  
Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.  
Manitowoc Eng. Wks., Manitowoc, Wis. .... 35  
Meckum Engrg., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morris Machine Wks., Baldwinville, N. Y.

## DREDGES (Sand and Gravel) Ladder

American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis. .... 4th cover  
Eagle Iron Wks., 129 Holcomb Ave., Des Moines, Iowa ..... 205  
Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif. .... 47  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Manitowoc Engr. Wks., Manitowoc, Wis. .... 35  
Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morris Machine Wks., Baldwinville, N. Y.  
Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.

## DRIFTERS

Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. .... 40  
Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Sullivan Mch. Co., Woodland Ave., Michigan City, Ind.

## DRILL BITS, Detachable

Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio  
Chicago Pneumatic Tool Co., 6 E. 44th St., New York, N. Y. .... 40  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38  
Hardscog Drill Co., 225 S. Benton St., Ottumwa, Iowa  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.)  
Rock Bit Service Co., 350 Depot St., Asheville, N. C.  
The Sanderson-Cyclone Drill Co., Orrville, Ohio  
Schramm, Inc., Virginia Ave., West Chester, Penn.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Timken Roller Bearing Co., 128 Duane Ave., S.W., Canton 6, Ohio ..... 4

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## DRILL SHARPENING MACHINES

Alloy & Steel Metals Co., 1862 E. 55th St., Los Angeles, Calif.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. .... 4th cover  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38  
Hardscog Drill Co., 225 S. Benton St., Ottumwa, Iowa  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
The Mine & Smelter Supply Co., 1422 17th St., Denver, Colo.  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

## DRILL STEEL

Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio  
Bethlehem Steel Co., Inc., Bethlehem, Penn. .... 22  
Bucyrus-Erie Co., P. O. Box 56, S. Milwaukee, Wis. .... 4th cover  
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. .... 40  
The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38  
Hardscog Drill Co., 225 S. Benton St., Ottumwa, Iowa  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Rock Bit Service Co., 350 Depot St., Asheville, N. C.  
Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill. .... 169  
The Sanderson-Cyclone Drill Co., Orrville, Ohio  
Schramm, Inc., Virginia Ave., West Chester, Penn.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Tennessee Coal, Iron & Railroad Co., Brown Marx Bldg., Birmingham 2, Ala.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark, N. J.

## DRILLING ACCESSORIES

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. .... 4th cover  
Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. .... 40  
The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio  
Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Keystone Driller Co., 2001-2021 8th Ave., Beaver Falls, Penn.  
Knox Mfg. Co., 811-823 Cherry St., Philadelphia 7, Penn. .... 232  
The Loomis Machine Co., 15 East Market St., Tiffin, Ohio  
The Sanderson-Cyclone Drill Co., Orrville, Ohio  
Schramm, Inc., Virginia Ave., West Chester, Penn.  
The Star Drilling Machine Co., 475 Washington, Akron 11, Ohio



# DIRECTORY

Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

**DRILLING CABLE, Manila, Sisal, etc.**

American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio.

E. I. DuPont de Nemours & Co., Inc., Nemours Bldg., Wilmington 98, Del. .... 57

The Edwin H. Fittler Co., 5625 Tacony St., Philadelphia 24, Penn.

The Loomis Machine Co., 15 E. Market St., Tiffin, Ohio.

The Star Drilling Machine Co., 475 Washington St., Akron 11, Ohio.

Wall Rope Works, Inc., 48 South Street, New York 5, N. Y.

## DRILLS, Core

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. .... 40

Four Wheel Drive Auto Co., Clintonville, Wis.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42

E. J. Longyear Co., 1701 Foshay Tower, Minneapolis, Minn.

The Sanderson-Cyclone Drill Co., Orrville, Ohio

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

## DRILLS, Gasoline, Rock

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. .... 4th Cover

Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.

Syntro Co., 450 Lexington Ave., Homer City, Penn.

## DRILLS, Pneumatic, Rock

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. .... 40

The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio

Davey Compressor Co., 266 N. Water St., Kent, Ohio

Gardner - Denver Co., Gardner & First Ave., Quincy, Ill. .... 38

Hardac Drill Co., 225 S. Benton St., Ottumwa, Iowa

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago, Ill.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42

Kadco Corp., 36-40 Eleventh Street, Long Island City, N. Y.

Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.

Schramm, Inc., Virginia Ave., West Chester, Pa.

Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## DRILLS, Stoper

Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. .... 40

Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42

Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.

Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.

## DRILLS, Well or Blast-Hole

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. .... 4th Cover

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. .... 40

Kadco Corp., 36-40 Eleventh Street, Long Island City, N. Y.

Keystone Driller Co., 2001 2021 8th Ave., Beaver Falls, Penn.

The Loomis Machine Co., 15 East Market St., Tiffin, Ohio

The Sanderson-Cyclone Drill Co., 157 S. Main St., Orrville, Ohio

The Star Drilling Machine Co., 475 Washington, Akron 11, Ohio

Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.

## DRIVES, Chain and Rope

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223

Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. .... 233

Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.

Industrial Gear Mfg. Co., 4544 Van Buren St., Chicago 24, Ill. .... 227

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51

Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind. .... 1

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45

Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

The Medart Co., 100 Potomac St., St. Louis 18, Mo.

Morse Chain Co., Turner Pl., Ithaca, N. Y.

Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.

Webster Mfg., Inc., Tiffin, Ohio.

## DRIVES, Gear

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 62

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

The Cleveland Worm & Gear Co., 3272 E. 80th Street, Cleveland 4, Ohio

Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. .... 233

Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.

Farrel-Birmingham Co., Inc., Ansonia, Conn.

Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.

Graham Transmissions Inc., 3754 N. Holton St., Milwaukee 12, Wis.

D. O. James Mfg. Co., 1140 W. Monroe St., Chicago, Ill.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51

Industrial Gear Mfg. Co., 4544 W. Van Buren St., Chicago 24, Ill. .... 227

W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. .... 26

Link-Belt Co., 2045 West Hunting Park Ave., Philadelphia 40, Penn. .... 1

Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

The Medart Co., 100 Potomac St., St. Louis 18, Mo.

Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

Pacific Car & Fdry. Co., 4th & Factory Sts., Renton, Wash.

Philadelphia Gear Works, Inc., Erie Ave. & G St., Philadelphia 34, Penn.

Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6

Webster Mfg., Inc., Tiffin, Ohio

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

## DRIVES, Short-Center

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

Browning Mfg. Co., 1935 Browning St., Maysville, Ky.

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223

Chicago Belting Co., 113-125 N. Green St., Chicago 7, Ill.

Continental Gin Co., Industrial Div., 4500 5th Ave., So., Birmingham, Ala. .... 233

Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.

Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill. .... 1

The Medart Co., 100 Potomac St., St. Louis 18, Mo.

Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129, 129

## DRIVES, Variable Speed

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

Electric Machinery Mfg. Co., 1336 N. E. Tyler St., Minneapolis 13, Minn.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

Graham Transmissions, Inc., 3754 N. Holton St., Milwaukee 12, Wis.

Ideal Commutator Dresser Co., Box 1001, Sycamore, Ill.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51

Kent Machine Co., Cuyahoga Falls, Ohio .... 219

Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn. .... 1

Morse Chain Co., Turner Pl., Ithaca, N. Y.

Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

Reeves Pulley Co., Columbus, Ind.

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6

Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## DRIVES, V-Belt, Flat Belt

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Browning Mfg. Co., 1935 Browning St., Maysville, Ky.

Chicago Belting Co., 113-125 N. Green Street, Chicago 7, Ill.

The Dayton Rubber Mfg. Co., Riverview Ave., Dayton 1, Ohio

The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo. .... 44

The B. F. Goodrich Co., Akron, Ohio .... 5

Thermold Rubber Div. of Thermold Co., Whitehead Road, Trenton 6, N. J.

United States Rubber Co., 1230 6th Ave., New York 20, N. Y.

## DRY PANS

The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio

Eagle Iron Works, 129 Holcomb Ave., Des Moines, Ia. 205

International Engr., Inc., Bolander Ave., Dayton 1, Ohio

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45

W. A. Riddell Corp., Bucyrus, Ohio.

## DRYERS

(Gravel, Rock, Sand, Rotary)

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y. .... 62

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 176

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

The Bonnot Co., Mulberry Road S.E., Canton, Ohio.

L. R. Christie Co., 17 E. 42nd St., New York 17, N. Y.

The F. D. Cummer & Son Co., E. 17th and Euclid Ave., Cleveland, Ohio

Denver Equipment Co., 1400 17th St., Denver 17, Colo. .... 31

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah

Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.

Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225

Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif. .... 47

Hetherington & Berner, Inc., 701 Kentucky Ave., Indianapolis 7, Ind.

Iowa Mfg. Co., 946 16th St., N.E., Cedar Rapids, Iowa. 166

Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave., Bldg., New York, N. Y. .... 10, 11

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1

Louisville Drying Mchry. Co., 463 Baxter Ave., Louisville, Ky.

The Macleod Co., 2322-40 Bogen St., Cincinnati, Ohio

The McCarter Iron Wks., Inc., Mill & Washington Sts., Allentown, Penn.

McDermott Bros. Co., Ft. of Washington St., Allentown, Penn.

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45

McGann Mfg. Co., Box 1187, York, Penn. .... 173

Maddox Fdy. & Machine Wks., Archer, Fla.

Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.

Manitowoc Engr. Works, Manitowoc, Wis. .... 35

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Nordberg Process Mchry. Co., Cleveland, Ohio.

Pangborn Corp., 120 Pangborn Blvd., Hagerston, Md.

H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover

Ruggles-Coles Engr. Co., 122 E. 42nd St., New York, N. Y.

Simplicity System Co., Riverside Drive, Chattanooga, Tenn.

# DIRECTORY

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129, 129  
 Traylor Engr. & Mfg. Co., Allentown, Penn. .... 7  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. .... 8

**DRYERS (Plaster Board)**  
 The Coe Mfg. Co., Palmsville, Ohio.

**DRYERS (Steam Coil)**  
 L. R. Christie Co., 17 East 42nd St., New York 17, N. Y.  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. .... 31  
 Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225  
 McDermott Bros. Co., ft. of Washington St., Allentown, Penn.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover  
 W. A. Riddell Corp., Bucyrus, Ohio  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 Young Radiator Co., 709 S. Marquette St., Racine, Wis.

**DUMPING MECHANISMS, Truck**  
 Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. .... 242  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 Gar Wood Industries, Inc., 7924 Riolle St., Detroit 11, Mich.  
 Hercules Steel Products Co., Sherman St., Gallon, Ohio  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 Oshkosh Motor Truck, Inc., 2302 Oregon St., Oshkosh, Wis.  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 Truck Equipment Co., Inc., 1791 Filmore Ave., Buffalo, N. Y. .... 247

**DUST COLLECTING EQUIPMENT & SUPPLIES**  
 American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky. .... 187  
 American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.  
 American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.  
 Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.  
 Buell Eng. Co., Inc., 70 Pine, New York, N. Y. .... 60  
 Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
 By-Products Recoveries, Inc., 90 West St., New York 6, N. Y.  
 Clark Dust Control Co., 210 N. Mozart St., Chicago, Ill.  
 Dracoo Corp., 4043 E. 116th St., Cleveland, Ohio  
 Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Fisher Scientific Co., 717 Forbes St., Pittsburgh, Penn.  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. .... 166  
 Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y.  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York City, N. Y. .... 10, 11  
 The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio

**Lime & Hydrate Plants Co., York, Penn. .... 173**  
 Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
 Markley Dust Control System, Inc., 431 Fayette Ave., Mamaroneck, N. Y.  
 D. J. Murray Mfg. Co., Wausau, Wis.  
 The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
 Pangborn Corp., 120 Pangborn Blvd., Hagerstown, Md.  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio .... 55  
 Ruemelin Mfg. Co., 3860 N. Palmer St., Milwaukee 12, Wis.  
 Claude B. Schnelble Co., 2827 25th St., Detroit 32, Mich.  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 The W. W. Sly Mfg. Co., 4700 Train Ave., Cleveland 2, Ohio  
 B. F. Sturtevant Co., 103 Clayton St., Boston, Mass.  
 Sutton, Steele & Steele, Inc., 1031 S. Haskell St., Dallas 10, Tex.  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.

**DUST COLLECTORS, Bag-Type**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.  
 Ralph B. Carter Co., Markley-Carter Dust Collector Div., 196 Atlantic St., Hackensack, N. J.  
 J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
 Dracoo Corp., 4043 E. 116th St., Cleveland, Ohio  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
 Pangborn Corp., 120 Pangborn Blvd., Hagerstown, Md.  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio .... 55  
 Ruemelin Mfg. Co., 3860 N. Palmer St., Milwaukee 12, Wis.  
 The W. W. Sly Mfg. Co., 4700 Train Ave., Cleveland 2, Ohio  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.  
 Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. .... 29

**DUST COLLECTORS, Cyclone**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
 American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.  
 Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 175  
 Bayley Blower Co., 1817 S. 66th Street, Milwaukee 14, Wis.

**Buell Engr. Co., Inc., 70 Pine, New York, N. Y. .... 60**  
 Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
 L. Burmeister Co., 3225 W. Burnham St., Milwaukee 4, Wis.  
 By-Products Recoveries, Inc., 90 West St., New York 6, N. Y.  
 Dracoo Corp., 4043 E. 116th St., Cleveland, Ohio  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. .... 166  
 The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
 The McCarter Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
 The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
 Pangborn Corp., 120 Pangborn Blvd., Hagerstown, Md.  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio .... 55  
 Prat-Daniel Corp., 84 S. Water St., East Portchester, Conn.  
 Separations Eng. Corp., 110 E. 2nd St., New York 17, N. Y.  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.

**Sprout, Waldron & Co., Muncy, Penn.**  
 Thermix Engr. Co., First National Bank Bldg., Greenwich, Conn.  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo. .... 29

**DUST COLLECTORS, Electrical Precipitators**  
 Research Corp., 405 Lexington Ave., New York, N. Y.  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

**DUST COLLECTORS, Hydraulic**  
 American Air Filter Co., 215 Central Ave., Louisville 8, Ky. .... 187  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio .... 55  
 Claude B. Schnelble Co., 2827 25th St., Detroit 16, Mich.  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 Warren Brothers Roads Co., 38 Memorial Drive, Cambridge 42, Mass.  
 Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.

**DUST COLLECTORS, Portable**  
 American Air Filter Co., 215 Central Ave., Louisville 8, Ky. .... 187  
 Ralph B. Carter Co., Markley-Carter Dust Collector Div., 196 Atlantic St., Hackensack, N. J.  
 Dracoo Corp., 4043 E. 116th St., Cleveland, Ohio  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Ideal Commutator Dresser Co., Box 1001, Sycamore, Ill.

**Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equip. Co.)**  
 Lewistown Foundry & Machinery Co., 16 Elizabeth, Lewistown, Penn.  
 The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
 Pangborn Corp., 120 Pangborn Blvd., Hagerstown, Md.  
 Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio .... 55  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 The W. W. Sly Mfg. Co., 4700 Train Ave., Cleveland 2, Ohio  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 United States Hoffman Machinery Corp., 105 4th Ave., New York 3, N. Y.  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

**DUST COLLECTORS, Rock Drill**  
 Ralph B. Carter Co., Markley-Carter Dust Collector Div., 196 Atlantic St., Hackensack, N. J.  
 The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
 Spencer Turbine Co., Hartford, Conn.

**DUST CONVEYING SYSTEMS (See Air Conveyors)**

**DUST SAMPLING AND ANALYZING EQUIPMENT**  
 Fisher Scientific Co., 717 Forbes Street, Pittsburgh 19, Penn.  
 Mine Safety Appliances Co., Braddock, Thomas & Meade St., Pittsburgh 8, Penn.  
 Research Corp., 405 Lexington Ave., New York, N. Y.  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Wilson Products, Inc., 22nd & Washington Sts., Reading, Penn.

**DYNAMITE AND BLASTING EXPLOSIVES (See Explosives & Dynamite)**

**EARTH MOVING EQUIPMENT (Stripping and Excavating)**  
 R. C. Le Tournau, Inc., 220 Grant St., Peoria, Ill.  
 Lima Locomotive Wks., Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio .... 235  
 Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. .... 189  
 Manitowoc Engr. Wks., Manitowoc, Wis. .... 36  
 The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. .... 3

**ECONOMIZERS, Waste Heat (See Boilers, Waste Heat)**

**ELECTRIC MOTORS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Louis Allis Co., 427 E. Stewart St., Milwaukee 7, Wis.  
 Burke Electric Co., 12th & Cranberry, Erie, Penn.  
 Century Electric Co., 1806 Pine, St. Louis 3, Mo.  
 Crocker-Wheeler Elec. Mfg. Co., Div. of Joshua Hendy Iron Works, Ampere, N. J.  
 Electric Machinery Mfg. Co., 1336 N. E. Tyler St., Minneapolis 13, Minn.  
 Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis 3, Mo.

# DIRECTORY

Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

General Electric Co., 1 River Road, Schenectady 5, N. Y.  
Howell Electric Motors Co., 201 N. Elm St., Howell, Mich.

The Ideal Electric & Mfg. Co., East First & Oak, Mansfield, Ohio

Reliance Electric & Eng. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio

U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles, Calif.

Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

**ELECTRIC SWITCH GEAR**  
Electric Mchry. Mfg. Co., 1336 Tyler St. N. E., Minneapolis 13, Minn.

General Electric Co., 1 River Road, Schenectady 5, N. Y.  
The Woodford Engr. Co., 77 West Washington St., Chicago 2, Ill.

## ELECTRIC TRANSFORMERS

Electric Mchry. Mfg. Co., 1336 Tyler St. N. E., Minneapolis 13, Minn.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.

Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.

## ELECTRICAL EQUIPMENT AND SUPPLIES

Allis-Chalmers Mfg. Co., 1945 Prodrac St., Milwaukee 1, Wis.

Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio

Electric Machinery Mfg. Co., 1336 Tyler St. N. E., Minneapolis 13, Minn.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Penn.

Johns-Manville, 22 E. 40th St., New York 16, N. Y.

Keystone Electric Co., 1220 Ridgely St., Baltimore 30, Md.

Square D Co., Industrial Controller Div., 4041 N. Richards St., Milwaukee 12, Wis.

Ticket Office Equipment Co., Inc., 3913 Provost Ave., New York, N. Y.

Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

Wheeler Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

The Woodford Engr. Co., 77 West Washington St., Chicago 2, Ill.

## ELECTRICAL INSTRUMENTS

Bristol Co., Waterbury 91, Conn.

Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.

Builders-Providence, Inc., 9 Coddling St., Providence 1, R. I.

Cambridge Instrument Co., Inc., 3739 Grand Central Terminal, New York 17, N. Y.

Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio

The Foxboro Co., Neponset Ave., Foxboro, Mass.

General Electric Co., 1 River Road, Schenectady 5, N. Y.

Leeda & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Penn.  
Wheeler Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## ELECTRICAL SEPARATORS

Dings Magnetic Separator Co., 509 E. Smith St., Milwaukee 7, Wis.

Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio

Ritter Products Corp., Ritter Park, Rochester 3, N. Y.

Sutton, Steele & Steele, Inc., 1031 S. Haskell, Dallas 10, Texas

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

## ELECTRODES, Welding (See Welding Rods and Electrodes)

## ELEVATORS, Chain or Belt & Bucket

Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.

Atlas Conveyor Co., 15th St., Clintonville, Wis.

Austin-Western Road Mchry. Co., 601 Farnsworth Ave., Aurora, Ill. 53

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 175

Beaumont Blrch Co., 1505 Race St., Philadelphia 2, Penn.

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco, Calif.

Brooks Equipment & Mfg. Co., 408 Davenport Road, Knoxville, Tenn. 242

L. Burmeister Co., 3225 W. Burnham St., Milwaukee 4, Wis.

Butler Bin Co., P. O. Box 407, Waukesha, Wis. 54

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

The Columbus Conveyor Co., 869 W. Goodale St., Columbus, Ohio

Continental Gin Co., Industrial Division, 4500 5th Ave. S., Birmingham, Ala. 233

Conveyor Co., Inc., 3280 E. Slauson Ave., Los Angeles 11, Calif. 247

Diamond Iron Works, Inc. and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247

J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kan.

The Elmer Corp., P. O. Box 300, Salt Lake City 8, Utah

Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio

Gifford-Wood Co., Hudson, N. Y.

Greenville Mfg. Wks., Greenville, Ohio

George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.

Heitzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio

Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa 166

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

The C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234

Kennedy-Van Saun Mfg. & Engineering Co., 2 Park Ave. Bldg., New York City, N. Y. 10, 11

Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

Kent Machine Co., Cuyahoga Falls, Ohio 219

Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Pa.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

The McCarter Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.

McGann Mfg. Co., P. O. Box 1187, York, Penn. 173

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45

Maddox Fdy. & Machine Wks., Archer, Fla.

Madson Iron Wks., 5631 Bickett St., Huntington Park, Calif.

Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.

Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.

Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio

The Neff & Fry Co., Camden, Ohio

New Holland Machine Co., 100 Franklin St., New Holland, Penn. 226

Noble Co., 1860 7th St., Oakland 7, Calif. 229

Pioneer Eng. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. 227

Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

W. A. Riddle Corp., Bucyrus, Ohio

Robins Conveyors Inc., 270 Passaic Ave., Passaic, New Jersey

Rogers Iron Works Co., 11th & Pearl, Joplin, Missouri. 200

Screw Conveyor Corp., 700 Hoffman St., Hammond, Ind.

Simplicity System Co., Riverside Drive, Chattanooga, Tenn.

Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis. 56

Spears-Wells Mchry. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.

Sprout, Waldron & Co., Muncy, Penn.

Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.

Stearns Mfg. Co., Inc., Adrian Michigan 208

Stephens-Adamson Mfg. Co., Ridgeway Ave., Aurora, Ill. 6

Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. 39

W. Toepper & Sons, Inc., 1450 E. Park Place, Milwaukee 11, Wis.

Trowbridge Conveyor Co., 750 Van Houten Ave., Clifton, N. J.

United States Rubber Co., 1230 6th Ave., New York 20, N. Y.

Universal Eng. Corp., 625 C Ave., W., Cedar Rapids, Iowa

Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. 239

Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8

Webster Mfg., Inc., Tiffin, Ohio

Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## ELEVATORS, Bulk Cement

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

Butler Bin Co., Box 407, Waukesha, Wis. 54

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233

Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.

Erie Steel Const. Co., 15th & Geist Rd., Erie, Penn. 204

Fuller Co., Fuller Bldg., Catasauqua, Penn. 14, 15

George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Heitzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.

New Holland Machine Co., 100 Franklin St., New Holland, Penn. 226

Noble Co., 1860 7th St., Oakland 7, Calif. 229

Screw Conveyor Co., 700 Hoffman St., Hammond, Ind.

Sprout, Waldron & Co., Muncy, Penn.

Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.

Stearns Mfg. Co., Inc., Adrian, Mich. 208

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Webster Mfg., Inc., Tiffin, Ohio

## ELEVATORS (Portable)

Atlas Conveyor Co., 15th St., Clintonville, Wis.

Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.

Clyde Iron Wks., Inc., 29th Ave. W. & Michigan St., Duluth 1, Minn.

The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.

Diamond Iron Wks., Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247

George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

Link-Belt Co., 2045 West Hunting Park Ave., Philadelphia 40, Penn. 1

Noble Co., 1860 7th St., Oakland 7, Calif. 229

Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

## ELIMINATORS, Soft Stone (See also Soft Stone Eliminators, Scrubbers)

Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.

Eagle Iron Works, 129 Holcomb, Des Moines, Iowa. 205

Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.

McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45

Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. 92

Simplicity Eng. Co., 1944 Ralph St., Durand, Mich. 32

Smith Eng. Works, 532 E. Capitol Drive, Milwaukee, Wis. 56



# DIRECTORY

## ENGINEERING SERVICE, Consulting and Design- ing

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio..... 218  
Anderson Engr. Co., 19-21 Charles St., Cambridge 41, Mass.  
Arnold & Weigel Inc., Woodville, Ohio  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.... 244  
Blaw - Knox Co., Blawnox, Penn..... 245  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco, Calif.  
Burrell Eng. & Const. Co., 400 W. Madison, Chicago, Ill.  
J. D. Christian Engineers, 480 Potrero Ave., San Francisco, Calif.  
Clyde Iron Wks., 29th Ave. & Michigan St., Duluth 1, Minn.  
Diamond Iron Wks., Inc., & The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn..... 247  
The Galigher Co., 49 S. 2nd East St., Salt Lake City, Utah  
Gifford - Wood Co., Hudson, N. Y.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Greenville Mfg. Wks., Greenville, Ohio  
Henry J. Kaiser Co., Latham Square Bldg., Oakland 12, Calif.  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y.... 10, 11  
Fred T. Kern Co., P.O. Box 2057, Milwaukee 1, Wis.  
Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
M. A. Long Co., 10 W. Chase St., Baltimore, Md.  
McGann Mfg. Co., P.O. Box 1187, York, Penn..... 173  
MacDonald Engr. Co., 188 W. Randolph St., Chicago 1, Ill.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn..... 45  
Manitowoc Eng. Works, Manitowoc, Wis..... 35  
Meckum Eng. Co., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
The Nicholson Co., 10 Rockefeller Plaza, New York 20, N. Y.  
Nordberg Process Mchry. Co., Cleveland, Ohio  
Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
Parsons Eng. Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
H. K. Porter Co., Inc., 49th & Harrison St., Pittsburgh, Penn..... 2nd Cover  
W. A. Riddell Corp., Warren St., Bucyrus, Ohio  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo..... 200  
Separations Process Co., Fuller Bldg., Catasauqua, Penn.  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y..... 128, 129  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.  
Traylor Eng. & Mfg. Co., Allentown, Penn..... 7  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn..... 8

Webster Mfg., Inc., Timm, Ohio  
Hugo W. Welmer, 2412 W. State St., Milwaukee 3, Wis.  
Western Machinery Co., 670 Folsom St., San Francisco, Calif.  
Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo..... 29

## ENGINES, Diesel (See Diesel Engines)

## ENGINES, Gasoline (See Gasoline Engines)

## ENGINES, Kerosene, Oil

Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis..... 24  
Busch-Sulzer Bros. Diesel Engine Co., 3300 S. 2nd St., St. Louis 18, Mo.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Hercules Motors Corp., 11th St. S.E., Canton, Ohio  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Wisconsin Motor Corp., 1910 S. 53rd St., Milwaukee 14, Wis.  
Worthington Pump & Mchry. Corp., 744 Broad St., Newark 2, N. J.

## ENGINES, Marine

Caterpillar Tractor Co., Peoria 8, Ill.  
Climax Engr. Co., 1810 S. 4th St., Clinton, Iowa..... 245  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Cummins Engine Co., 5th & Wilson Sts., Columbus, Ind. 21  
Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Drive, Detroit 23, Mich.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Gar Wood Industries, Inc., 7924 Riopelle St., Detroit 11, Mich.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale 11, Calif.  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Nordberg Mfg. Co., 3073 So. Chase Ave., Milwaukee 7, Wis. 34  
R. H. Sheppard Co., Philadelphia St., Hanover, Penn.

## ENGINES, Natural Gas

Caterpillar Tractor Co., Peoria 8, Ill.  
Climax Engr. Co., 810 S. 4th St., Clinton, Iowa..... 245  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Drive, Detroit 23, Mich.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Nordberg Mfg. Co., 3073 So. Chase Ave., Milwaukee 7, Wis. 34  
The Sanderson-Cyclone Drill Co., 157 S. Main St., Orrville, Ohio.

## ENGINES, Steam

Clyde Iron Works, Inc., 29 Ave. W. & Michigan St., Duluth 1, Minn.  
DeLaval Steam Turbine Co., Trenton, N. J.

Flory Mfg. Co., Main St., Bangor, Penn.  
Morris Machine Works, 31 E. Genesee St., Baldwinville, N. Y.  
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee, Wis..... 34  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn..... 8

## EXCAVATORS, Cableway Drillage (See Cable Excavators)

## EXCAVATORS, Ciamshell (See Cranes)

## EXCAVATORS, Scraper (See Scraper Excavators)

## EXCAVATORS, Tractor- Mounted

Anthony Co., Inc., Streator, Ill.  
Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill..... 53  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th Cover  
The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.  
Hi-Way Service Corp., 3857 W. Wisconsin Ave., Milwaukee, Wis.  
Insley Mfg. Co., 801 N. Olney St., Indianapolis, Ind.  
Lima Locomotive Works, Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio..... 235  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill..... 199  
Spears-Wells Mchry. Co., 1832 W. 9th St., Oakland 7, Calif.  
Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.... 27

## EXCAVATORS, Tower (See Cableways)

## EXCAVATORS, Truck- Mounted (See Shovels, Truck-Mounted)

## EXHAUSTERS

American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.  
Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
Clarage Fan Co., North & Porter Sts., Kalamazoo 16, Mich.  
The Ducon Co., 259 Norman Ave., Brooklyn 22, N. Y.  
The Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Pangborn Corp., 120 Pangborn Ave., Hagerstown, Md.  
Parsons Engr. Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
W. A. Riddell Corp., Bucyrus, Ohio.

## EXPLOSIVES & DYNAMITE

American Cyanamid & Chemical Corp., Explosive Dept., 35 Rockefeller Plaza, New York 20, N. Y.  
Atlas Powder Co., Delaware Trust Bldg., Wilmington 98, Del.  
Austin Powder Co., 758 Rockefeller Bldg., Cleveland, Ohio.  
E. I. DuPont de Nemours & Co., Inc., Nemours Bldg., Wilmington 98, Del..... 57  
Equitable Powder Mfg. Co., East Alton, Ill.  
Hercules Powder Co., 946 King St., Wilmington 99, Del.

Illinois Powder Mfg. Co., 730 Pierce Bldg., St. Louis 2, Mo.  
Independent Explosives Co., 453 Lander Bldg., Cleveland 14, Ohio.  
King Powder Co., 1703 First National Bank Bldg., Cincinnati, Ohio.  
Liberty Powder Co., Div. of F. W. Olin, 2218 Koppers Bldg., Pittsburgh, Penn.  
National Powder Co., Eldred, Penn.  
Trojan Powder Co., 17 N. 7th St., Allentown, Penn.

## FANS AND BLOWERS

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
American Blower Corp., Box 58, Roosevelt Park Annex, Detroit, Mich.  
Bayley Blower Co., 1817 S. 66th St., Milwaukee 14, Wis.  
Buffalo Forge Co., 490 Broadway, P. O. Box 985, Buffalo 5, N. Y.  
Clarage Fan Co., North & Porter Sts., Kalamazoo 16, Mich.  
Connecticut Blower Co., Hartford, Conn.  
Coppus Eng. Corp., 341 Park Ave., Worcester, Mass.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn..... 247  
Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis 3, Mo.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.... 42  
International Eng. Inc., 1145 Bolander, Dayton 1, Ohio  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio..... 51  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y. 10, 11  
The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio.  
The Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
The Northern Blower Co., 6409 Barborton Ave., Cleveland 2, Ohio  
Parsons Eng. Corp., 2545 E. 79th St., Cleveland 4, Ohio 55  
Pratt-Daniel Corp., 84 S. Water St., E. Fortchester, Conn.  
Roots - Connersville Blower Corp., 11 Water St., Connersville, Ind.  
Ruemelin Mfg. Co., 3860 N. Palmer St., Milwaukee 12, Wis.  
Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
B. F. Sturtevant Co., 37 Readville St., Hyde Park, Boston, Mass.

## FASTENERS, Bolt (See Bolt Fasteners)

## FEED WATER HEATERS

American Locomotive Co., 30 Church St., New York, N. Y.  
Bethlehem Steel Co., Bethlehem, Penn..... 22  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
Ross Heater & Mfg. Co., Inc., 1407 West Ave., Buffalo 13, N. Y.  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Struthers Wells Corp., 1003 Pennsylvania Ave. West, Warren, Penn.

# DIRECTORY

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## FEEDERS, APRONS

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Austin Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 175  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233

The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The F. D. Cummer & Son Co., E. 17th and Euclid Ave., Cleveland 15, Ohio

Diamond Iron Works, Inc. and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.

Iowa Mfg. Co., 916 - 16th St., N.E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

Link-Belt Co., 300 W. Pershing Road, Chicago 9, Ill. 1  
The McCarter Iron Works, Inc., Mill & Washington Sts., Norristown, Penn.

McLanahan & Stone Corp., 200 Wall Street, Hollidaysburg, Penn. 45  
Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.

Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
New Holland Machine Co., 100 Franklin St., New Holland, Penn. 826

Nordberg Process Mchry. Co., Cleveland  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Ross Screen & Feeder Co., 19 Rector St., New York 6, N. Y.  
Simplicity System Co., Riverside Drive, Chattanooga, Tenn.

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129  
Smith Engineering Works, 532 E. Capitol Dr., Milwaukee 12, Wis. 56

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Traylor Engr. & Mfg. Co., Allentown, Penn. 7

Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. 239  
Webster Manufacturing, Inc., Tiffin, Ohio

Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

FEEDERS (Concrete)  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
Stearns Mfg. Co., Inc., Adrian, Mich. 208

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

## FEEDERS (Flue Dust)

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Kennedy Van-Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11

Manitowoc Engr. Wks., Manitowoc, Wis. 35  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

## FEEDERS (Proportioning)

The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio  
Builders-Providence Inc., 9 Coddling St., Providence, R. I.

The Delster Concentrator Co., 901-905 Glasgow Ave., Fort Wayne, Ind.  
Fuller Co., Fuller Bldg., Catasauqua, Penn. 14, 15

The Galigher Co., 48 S. Second East St., Salt Lake City 1, Utah  
Hardinge Co., Inc., 240 Arch St., York, Penn. 225

Hills-McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.

Merrick Scale Mfg. Co., 180 Autumn St., Passaic, N. J.  
Richardson Scale Co., Clifton, N. J.

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Syntron Co., 450 Lexington Ave., Homer City, Penn.

## FEEDERS (Reciprocating)

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Ajax Flexible Coupling Co., Inc., 2 English St., Westfield, N. Y.

Anderson Engineering Co., 19-21 Charles St., Cambridge 41, Mass.  
Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 175

Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233

The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The F. D. Cummer & Son Co., E. 17th and Euclid Ave., Cleveland 15, Ohio

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
The Galigher Co., 48 S. Second East St., Salt Lake City 1, Utah

George Hales Mfg. Co., Inc., 391 Canal St., New York 51, N. Y.  
Hills-McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.

Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa 166  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45

New Holland Machine Co., 100 Franklin St., New Holland, Penn. 226  
W. A. Riddell Corp., Bucyrus, Ohio

Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Syntron Co., 450 Lexington Ave., Homer City, Penn.  
Traylor Engr. & Mfg. Co., Allentown, Penn. 7

FEEDERS (Rotary)  
Arnold & Welgel, Inc., Woodville, Ohio

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62

The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio  
Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233

The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Deister Machine Co., 1933 E. Wayne St., Fort Wayne 4, Ind. 228

Fuller Co., Fuller Bldg., Catasauqua, Penn. 14, 15  
The Galigher Co., 48 South Second East St., Salt Lake City 1, Utah

Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

New Holland Machine Co., 100 Franklin St., New Holland, Penn. 226  
Omega Machine Co., 9 Coddling St., Providence 1, R. I.

Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago 22, Ill. 19  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
land, Penn.

Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
Webster Mfg. Inc., Tiffin, Ohio

FEEDERS (Screw)  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62

Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.

The Delster Concentrator Co., 901-935 Glasgow Ave., Fort Wayne, Ind.  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129

Spout, Waldron & Co., Muncy, Penn.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
Webster Mfg. Inc., Tiffin, Ohio

FEEDERS (Table)  
The Babcock & Wilcox Co., 85 Liberty St., New York, N. Y. 62

Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233  
Hardinge Co., Inc., 240 Arch St., York, Penn. 225

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Link-Belt Co., 300 Pershing Rd., Chicago 9, Ill. 1

Nordberg Process Mchry. Co., Cleveland, Ohio  
Omega Machine Co., 9 Coddling St., Providence 1, R. I.

F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 129  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

FEEDERS (Weighing)  
Builders - Providence, Inc., Div. of Builders' Iron Fdy., 9 Coddling St., Providence 1, R. I.

Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.

Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
Merrick Scale Mfg. Co., 180 Autumn St., Passaic, N. J. 241

Omega Machine Co., 9 Coddling St., Providence 1, R. I.  
Richardson Scale Co., Clifton, N. J.

Schaffer Poidometer Co., 2828 Smallman St., Pittsburgh 22, Penn.  
Syntron Co., 450 Lexington Ave., Homer City, Penn.

FENCING, Wire  
American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio

Bethlehem Steel Co., Inc., Bethlehem, Penn. 22  
The California Wire Cloth Corp., 1001 22nd Ave., Oakland, Calif.

Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.

Page Steel & Wire Div., American Chain & Cable Co., Inc., Monessen, Penn. 58, Inside Back Cover

Pittsburgh Steel Co., Grant Bldg., Pittsburgh 30, Penn.  
Republic Steel Co., Republic Bldg., Cleveland, Ohio

John A. Roebling's Sons Co., 640 S. Broad St., Trenton 2, N. J.  
Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Ala.

FILTER CLOTH, Slurry Filters  
Buffalo Wire Wks. Co., 308-332 Terrace, Buffalo, N. Y.

Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio  
Filter Media Corp., Irvington-on-Hudson, N. Y.

Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.

The W. S. Tyler Co., 3615 Superior St., Cleveland 4, Ohio 231

FILTERS, Cement Slurry  
Bird Machine Co., S. Walpole, Mass. 130

Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31

# DIRECTORY

The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Filter Media Co., River Rd., Irvington-on-Hudson, N. Y.  
Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.

## FILTERS (Engine, Oil and Air)

American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky. 187  
Dollinger Corp. (Formerly Staynew Filter Corp.), 11 Centre Park, Rochester 4, N. Y.  
W.G.B. Oil Clarifier, Inc., 100 Greenkill Ave., Kingston, N. Y.  
Wix Accessories Corp., Ozark St., Gastonia, N. C.

## FIRE BRICK, Kiln Liners, etc. (See also Brick)

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 42  
General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.  
A. P. Green Fire Brick Co., Mexico, Mo.  
Harblson-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
E. J. Lavino & Co., 1528 Walnut St., Philadelphia 2, Penn.  
Mexico Refractories Co., Cole & Love St., Mexico Mo.  
Quigley Co., 227 Fifth Ave., New York 17, N. Y.  
Stockton Fire Brick Co., 1267 Russ Bldg., 235 Montgomery St., San Francisco, Calif.  
Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.  
Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

## FIRE EXTINGUISHERS

American-LaFrance-Foamite Corp., Elmira, N. Y.  
Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
Cardox Corp., 307 N. Michigan Ave., Chicago 1, Ill.  
Pulmosan Safety Equipment Corp., 176 Jackson St., Brooklyn 1, N. Y.

## FIRST AID EQUIPMENT AND MATERIALS

Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
John W. Breck, Inc., 115 Dwight St., Springfield, Mass.  
Davis Emergency Equip. Co., Inc., 45 Halleck St., Newark 4, N. J.  
Mine Safety Appliances Co., Braddock, Thomas & Meade St., Pittsburgh 8, Penn.  
Pulmosan Safety Equipment Corp., 176 Johnson St., Brooklyn 1, N. Y.

## FLEXIBLE COUPLINGS

Ajax Flexible Coupling Co., Inc., 2 English St., Westfield, N. Y.  
Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. 233  
Crocker-Wheeler Electric Mfg. Co., Div. of Joshua Hendy Iron Wks., Ampere, N. J.

Diamond Iron Wks., Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind. 1  
Lovejoy Flexible Coupling Co., 5037 W. Lake St., Chicago 44, Ill.

The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Philadelphia Gear Wks., Inc., Erie Ave. and C St., Philadelphia 34, Penn.  
Robins Conveyors Inc., 270 Passaic, Passaic, N. J.  
Winfield H. Smith, Inc., 1000 Rockland Ave., Springfield, N. Y.  
Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y.  
United States Rubber Co., 1230 6th Ave., New York 20, N. Y.  
T. B. Wood's Sons Co., 1325 5th Ave., Chambersburg, Penn.

## FLOOR TILE MACHINES, Concrete

Concrete Pipe Mch. Co., 9th & Division, Sioux City 19, Iowa  
W. E. Dunn Mfg. Co., Holland, Mich.  
Price Bros. Co., 1932 E. Monument Ave., Dayton, Ohio

## FLOORING, Industrial, Iron and Steel

Blaw-Knox Co., Blawnox, Penn. 245  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
Dobbie Fdy. & Machine Co., 146-170 Fortage Rd., Niagara Falls, N. Y.  
Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
Joseph T. Ryerson & Son, Inc., 16th and Rockwell St., Chicago, Ill. 169  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.

Truscon Steel Co., Albert St., Youngstown, Ohio  
Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

## FLOORING SYSTEMS (Concrete)

American Fluoresit Co., Inc., 635 Rockdale Ave., Cincinnati 29, Ohio  
Price Bros. Co., 1932 E. Monument Ave., Dayton, Ohio

## FLOTATION EQUIPMENT

The Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
The Galligher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.

The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
Separation Process Co., Fuller Bldg., Catasauqua, Penn.

F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.  
Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.  
Western Machinery Co., 760 Folsom St., San Francisco, Calif.

## FLOTATION REAGENTS & SUPPLIES

The Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
The Dow Chemical Co., Midland, Mich.

E. I. DuPont de Nemours & Co., Nemours Bldg., Wilmington 98, Del. 57  
The Galligher Co., 48 S. 2nd East St., Salt Lake City 1, Utah

Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Hercules Powder Co., 946 King St., Wilmington 99, Del.  
Separation Process Co., Fuller Bldg., Catasauqua, Penn.  
Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.

## FORMS, Concrete Burial Vaults (See Burial Vault Forms)

FORMS, Concrete, Miscellaneous Ornamental  
Bethlehem Steel Co., Bethlehem, Penn. 22  
W. E. Dunn Mfg. Co., Holland, Mich.  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.

Hollostone Co., N. Hollywood, Calif.  
The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio

Metal Forms Corp., 2334 N. Booth St., Milwaukee, Wis.  
Multiplex Concrete Machinery Co., Elmore, Ohio 217  
Noble Co., 1860 7th St., Oakland 7, Calif. 229  
Quinn Wire & Iron Wks., Boone, Iowa

## FROGS AND SWITCHES, Railway

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Bethlehem Steel Co., Bethlehem, Penn. 22  
C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.

Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 19, Penn.  
The Central Frog & Switch Co., Station O, Box 9, Cincinnati, Ohio

The Chase Fdy. & Mfg. Co., Columbus 7, Ohio

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
L. B. Foster Co., P. O. Box 1647, Pittsburgh 30, Penn.  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243

Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.

Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.

Pressed Steel Car Co., Inc., Indus. Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202

Taylor-Wharton Iron and Steel Co., High Bridge, N. J. 16

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Penn.

## FURNACES, Forging

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
MacLeod Co., 2232-40 Bogen St., Cincinnati, Ohio  
Wellman Eng. Co., 7000 Central Ave., Cleveland 4, Ohio 231  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## FUSES, Detonating & Blasting (See Blasting Caps, Blasting Supplies)

## GARBAGE RECEPTACLE MOLDS, Concrete

Flint & Walling Mfg. Co., Inc., Kendallville, Ind.

## GARDEN FURNITURE MOLDS, Concrete

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio 218  
W. E. Dunn Mfg. Co., Holland, Mich.

## GAS ANALYZERS AND RECORDERS

Burrell Technical Supply Co., 1936-42 5th Ave., Pittsburgh 19, Penn.  
Cambridge Instrument Co., Inc., 3752 Grand Central Terminal, New York 17, N. Y.

Davis Emergency Equipment Co., Inc., 45 Halleck St., Newark 4, N. J.  
Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.

Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Mines Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.

F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129

## GAS PRODUCERS

Wellman Eng. Co., 7000 Central Ave., Cleveland 4, Ohio 231

R. D. Wood Co., 400 Chestnut St., Philadelphia 5, Penn.

## GASOLINE ENGINES

Allis-Chalmers Mfg. Co., 1945 Prodder St., Milwaukee 1, Wis.

Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis. 24  
Briggs & Stratton Corp., 2711 N. 13th St., Milwaukee 1, Wis.

The Buda Co., 15401 Commercial Ave., Harvey, Ill. 33

Caterpillar Tractor Co., W. Washington, Peoria 8, Ill.  
Climax Eng. Co., 1512 S. 4th St., Clinton, Iowa



Continental Motors Corp., Detroit, Mich.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Hercules Motors Corp., 11th St., S. E., Canton Ohio  
International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.  
Lycorning Div., The Aviation Corp., 852 Oliver St., Williamsport, Penn.  
Minneapolis - Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
The Sanderson-Cyclone Drill Co., 157 S. Main St., Orrville, Ohio  
Waukesha Motor Co., P. O. Box 379, Waukesha, Wis.  
Wisconsin Motor Corp., 1910 W. 53rd St., Milwaukee 14, Wis.

**GATES (See Bin Gates and Chutes)**

**QUAGES**

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio  
Manning, Maxwell & Moore, Inc., 11 Elias St., Bridgeport 2, Conn.  
Wheeler Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

**GEAR-MOTORS**

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco, Calif.  
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.  
Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.  
Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.  
General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
D. O. James Mfg. Co., 1140 W. Monroe St., Chicago, Ill.  
Kent Machine Co., Cuyahoga Falls, Ohio ..... 219  
Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn. .... 1  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
Philadelphia Gear Works, Inc., Erie Ave. & G St., Philadelphia 34, Penn.  
Reliance Electric & Engr. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.  
Winfield H. Smith, Inc., Springfield, Erie County, N. Y.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**GEAR REDUCERS**

Abart Gear & Machine Co., 4834 W. 16th St., Chicago 50, Ill.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
The Cleveland Worm & Gear Co., 3272 E. 80th St., Cleveland 4, Ohio  
Continental Gin Co., Industrial Div., 4500 5th Ave. So., Birmingham, Ala. .... 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.

DeLaval Steam Turbine Co., Trenton, N. J.  
Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.  
Farrel-Birmingham Co., Inc., Ansonia, Conn.  
Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.  
Fuller Mfg. Co., Kalamazoo, Mich.  
Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Graham Transmission Inc., 3754 N. Holton St., Milwaukee 12, Wis.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
D. O. James Mfg. Co., 1140 W. Monroe St., Chicago, Ill.  
W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. .... 26  
Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn. .... 1  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Ottumwa Iron Works, 402 W. 7th Main St., Ottumwa, Iowa  
Pacific Car & Fdy. Co., 4th and Factory Sts., Renton, Wash.  
Palmer-Bee Co., 1753 Poland Ave., Detroit, Mich.  
Philadelphia Gear Works, Inc., Erie Ave. & G St., Philadelphia 34, Penn.  
Winfield E. Smith, Inc., Springfield, Erie County, N. Y.  
Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
The Webb Corp., 402 E. Broadway, Webb City, Mo.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

**GEARS**

Abart Gear & Machine Co., 4834 W. 16th St., Chicago 50, Ill.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
Birdsboro Steel Foundry & Machine Co., 1941 Furnace St., Birdsboro, Penn.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Cleveland Worm & Gear Co., 3272 E. 80th St., Cleveland 4, Ohio  
Continental Gin Co., Industrial Div., 4500 5th Ave. So., Birmingham, Ala. .... 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.  
Erie Steel Foundry Co., Portland, Ore.  
Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.  
Farrel-Birmingham Co., Inc., Ansonia, Conn.  
Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio  
Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.  
Fuller Mfg. Co., Kalamazoo, Mich.  
Gears & Forgings, Inc. (Ohio Forge & Machine Co.), 3012 Woodhill Rd., Cleveland, Ohio

Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Graham Transmissions, Inc., 3754 N. Holton St., Milwaukee 12, Wis.  
Greenville Mfg. Works, Greenville, Ohio  
Industrial Gear Mfg. Co., 4544 Van Buren St., Chicago 24, Ill. .... 227  
D. O. James Mfg. Co., 1140 W. Monroe St., Chicago, Ill.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. .... 26  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. .... 11  
Link-Belt Co., 2045 West Hunting Park Ave., Philadelphia 40, Penn. .... 1  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
McNally-Pittsburg Mfg. Corp., Pittsburg, Kan.  
Maddox Fdry. & Machine Works, Archer, Fla.  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
Minneapolis - Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
Pacific Car & Foundry Co., 4th and Factory Sts., Renton, Wash.  
Palmer-Bee Co., Detroit, Mich.  
Philadelphia Gear Works, Inc., Erie Ave. & G St., Philadelphia 34, Penn.  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N.J.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200  
Winfield E. Smith, Inc., Springfield, Erie County, N. Y.  
Standard Transmission Equipment Co., 3407 Verdugo Road, Los Angeles 41, Calif.  
Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
Stroh Process Steel Co., 1423 High St., Pittsburgh, Penn.  
Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7  
Webb Corp., 402 E. Broadway, Webb City, Mo.  
Webster Mfg. Inc., Tiffin, Ohio  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**GENERATOR SETS (Diesel-Electric)**

The Buda Co., 15401 Commercial Ave., Harvey, Ill. .... 33  
Caterpillar Tractor Co., Peoria 8, Illinois  
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. .... 40  
Climax Engr. Co., 1810 S. St., Clinton, Iowa ..... 245  
The Cooper-Bessemer Corp., Sandusky, St. Mt. Vernon, Ohio  
Crocker - Wheeler Electric Mfg. Co., Div. of Joshua Hendy Iron Works, Amperre, N. J.  
Cummins Engine Co., 5th & Wilson Sts., Columbus, Ind. .... 20, 21  
Detroit Diesel Engine Div., General Motors Corp., 13400 West Outer Drive, Detroit 23, Mich.  
Enterprise Engine & Fdry. Co., 18th & Florida Sts., San Francisco 10, Calif.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Lester-Blackstone Inc., 1706 S. 68th St., Milwaukee 14, Wis.  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
R. H. Sheppard Co., Philadelphia St., Hanover, Penn.

**GENERATOR SETS (Gasoline)**

The Buda Co., 15401 Commercial Ave., Harvey, Ill. .... 33  
Climax Engr. Co., 1810 S. 4th St., Clinton, Iowa .... 245  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Sterling Mchry. Corp., 411 Southwest Blvd., Kansas City, Mo.  
Syntro Co., 480 Lexington Ave., Homer City, Penn.  
Waukesha Motor Co., Box 379, Waukesha, Wis.

**GENERATOR SETS, Electric Motor**

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Louis Allis Co., 427 E. Steward St., Milwaukee 7, Wis.  
Burke Electric Co., 12th & Cranberry, Erie, Penn.  
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.  
Crocker-Wheeler Electric Mfg. Co., Div. of Joshua Hendy Iron Works, Amperre, N. J.  
Electric Machinery Mfg. Co., 1336 N. E. Tyler St., Minneapolis 13, Minn.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
The Ideal Electric & Mfg. Co., East First & Oak, Mansfield, Ohio  
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
Reliance Electric & Engr. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**GENERATOR SETS, Turbine**

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Crocker-Wheeler Electric Mfg. Co., Div. of Joshua Hendy Iron Works, Amperre, N. J.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Electric Machinery Mfg. Co., 1331 N. E. Tyler St., Minneapolis 13, Minn.  
General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

**GOGGLES, Safety (See Safety Equipment)**

**GRAPPLES**

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201

# DIRECTORY

Blaw-Knox Co., Blawnox, Penn. 245  
The Owen Bucket Co., 6001 Breakwater Ave., Cleveland 2, Ohio 236  
Wellman Eng. Co., 7000 Central Ave., Cleveland 4, Ohio 231

## GREASE CUPS

Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.  
Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind. 1  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

## GREASE (See Lubricants)

## GRINDERS, for Detachable Bits

The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.  
Sullivan Mch. Co., Woodland Ave., Michigan City, Ind.

## GRINDING AIDS, Cement

The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y.  
Dewey & Almy Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.  
Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.

## GRINDING MEDIA, Mills (Also see Grinding Pebbles)

Abbe Eng. Co., 54 Church St., New York, N. Y.  
American Forge Co., Berkeley, Calif.  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
Coates Steel Products Co., Greenville, Ill.  
Colorado Fuel and Iron Corp., P. O. Box 1920, Denver 1, Colo.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo.  
Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
International Engr., Inc., Bolander Ave., Dayton 1, Ohio  
Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
National Malleable and Steel Castings Co., 10609 Quincey Ave., Cleveland, Ohio  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. 92  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd cover  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Traylor Engr. & Mfg. Co., Allentown, Penn. 7

## GRINDING MILL CONTROLS, Feed Regulators

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn. 243  
Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. 177  
Hardinge Co., Inc., 240 Arch St., York, Penn. 30  
International Engr., Inc., Bolander Ave., Dayton 1, Ohio  
Kennedy-Van Saun Mfg. & Engr. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver, 17, Colo.

Mosher Electronic Controls, 130 W. 42nd St., New York 18, N. Y.  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. 92  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129

## GRINDING PEBBLES

Abbe Eng. Co., 54 Church St., New York, N. Y.  
Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
American Forge Co., Berkeley, Calif.  
Baraboo Quartzite Co., Baraboo, Wis.  
Hardinge Co., Inc., 240 Arch St., York, Penn. 30  
Jasper Stone Co., Sioux City, Iowa  
Patterson Fdry. & Mach. Co., E. Liverpool, Ohio  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd cover  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Wehenn Abrasives Co., 811 W. Jackson Blvd., Chicago, Ill.

## GRINDING WHEELS

The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y.  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Widdett St., Passaic, N. J. 13  
Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y.  
United States Rubber Co., 1230 6th Ave., New York 20, N. Y.

## GRIZZLIES

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Diamond Iron Works, Inc., and The Mahr Mfg. Co., Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
Greenville Mfg. Works, Greenville, Ohio  
George Halsz Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa 166  
Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.  
Nordberg Process Mch. Co., Cleveland, Ohio  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Pioneer Eng. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. 227  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200

Smith Eng. Works, 532 E. Capitol Dr., Milwaukee 12, Wis. 56  
Southwestern Eng. Co., 480 Santa Fe Ave., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Syntroon Co., 450 Lexington Ave., Homer City, Penn.  
Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231  
Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa  
Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. 230  
Webster Mfg., Inc., Tiffin, Ohio  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## GUARDS, Lamp

Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
Flexible Steel Lacing Co., 4607-31 Lexington St., Chicago 44, Ill. 245

## GUARDS, Machinery

Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio  
Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.  
The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231

GUNS, Hydraulic Monitor  
Georgia Iron Works, 605 Twelfth St., Augusta, Ga.

## GUTTER BLOCK MACHINES, Concrete

Stearns Mfg. Co., Inc., Adrian, Mich. 208

## GYPSUM PLANT MACHINERY

Earle C. Bacon, Inc., 17 John St., New York 17, N. Y. 244  
Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Coe Mfg. Co., Painesville, Ohio  
J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kan.  
Gruendler Crusher & Pulverizer Co., 2915-17 Market St., St. Louis, Mo. 177  
The Her-Born Eng. & Mfg. Co., Box 666, Sandusky, Ohio  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. 45  
Nordberg Process Mch. Co., Cleveland, Ohio  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia, Penn. 92  
H. K. Porter Co., Inc., 49th & Harrison St., Pittsburgh, Penn. 2nd cover  
Raymond Pulverizer Div., Combustion Eng. Co., Inc., 1319 N. Branch St., Chicago 22, Ill. 18, 19  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129

Standard Steel Corp., 5001 So. Boyle Ave., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Sturtevant Mill Co., 108 Clayton St., Dorchester, Boston 22, Mass. 39  
Syntroon Co., 450 Lexington Ave., Homer City, Penn.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. 8

## GYPSUM PLANTS, Engineers, Contractors

J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kan.  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Henry J. Kaiser Co., Latham Square Bldg., Oakland, Calif.  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
The Nicholson Co., 10 Rockefeller Plaza, New York 20, N. Y.  
Nordberg Process Mch. Co., Cleveland, Ohio  
U. S. Machinery Co., Inc., 90 Broad St., New York 4, N. Y.  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8

## HAMMERMILLS

(See Crushers, Hammer, also Mills)

## HAMMERS, Electric

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y.  
Syntroon Co., 450 Lexington Ave., Homer City, Penn.

## HAMMERS, Pulverizer

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Alloys Steel & Metals Co., 1862 E. 55th St., Los Angeles 11, Calif.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
American Pulverizer Co., 1249 Macklind Ave., St. 10, Mo. 37  
Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 11, Minn.  
Curtis Pneumatic Machinery Co., 1988 Klien Ave., St. Louis, Mo.  
Diamond Iron Works, Inc., and The Mahr Mfg. Co., 1800 N. 2nd St., Minneapolis, Minn. 247  
Dixie Mch. Co., 4200 Goodfellow, St. Louis 20, Mo. 195  
Eagle Crusher Co., Inc., 900 Harding Way East, Gallon, Ohio 25  
Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243  
Glison Bros. Co., Fredonia, Wis. 245  
Gruendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. 177  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Manitowoc Eng. Works, Manitowoc, Wis. 35  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. 92  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.

Prater Pulverizer Co., 1625 S. 55th Ave., Chicago 50, Ill.  
 Raymond Pulverizer Div., Combustion Engr. Co., Inc., 1319 N. Branch St., Chicago 22, Ill.  
 Taylor-Wharton Iron & Steel Co., High Bridge, N. J.  
 Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo.  
 Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

**HARDENERS, Concrete**  
 American Fluoresit Co., Inc., 635 Rockdale Ave., Cincinnati 29, Ohio.  
 E. I. DuPont de Nemours & Co., Inc., Nemours Bldg., Wilmington 98, Del.  
 Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
 Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.  
 Solvay Sales Corp., 40 Recor- T. Tamms Silica Co., 228 N. La Salle St., Chicago 1, Ill.

**HARD SURFACING METALS**  
 Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio.  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.  
 Bradley Pulverizer Co., 123 So. Third St., Allentown, Penn.  
 Coast Metals, Inc., 1232 Camden Ave., S. W., Canton, Ohio  
 Dymondhard Corp. of America, 250 W. 57th St., New York 19, N. Y.  
 Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
 Haynes Stellite Co., Harrison & Lindsay St., Kokomo, Ind.  
 Lincoln Electric Co., 12618 Colt Rd., Cleveland 1, Ohio  
 Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Mir-O-Col Alloy Co., 2416 E. 53rd St., Vernon, Calif.  
 The Resisto-Loy Co., 127 Bayliss, S.W., Grand Rapids, Mich.  
 Stoddy Co., 1134 W. Slauson St., Whittier, Calif.  
 Stutz-Sickles Co., 134 Lafayette St., Newark 5, N. J.  
 Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

**HATS, Protective**  
 Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
 Davis Emergency Equip. Co., Inc., 45 Halleck St., Newark 4, N. J.  
 Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.  
 The E. F. Goodrich Co., Akron, Ohio  
 Mine Safety Appliances Co., Braddock, Thomas, Meade St., Pittsburgh 8, Penn.  
 Pulmosan Safety Equipment Corp., 176 Johnson St., Brooklyn 1, N. Y.  
 Willson Products, Inc., 302 Thorn St., Reading, Penn.

**HAULAGE SYSTEMS, Electric**  
 Atlas Car & Mfg. Co., 1140 Ivanhoe Rd., Cleveland, Ohio  
 Easton Car & Construction Co., Box 270, Easton, Penn.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio

Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.  
 Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
 The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.

**HEAT EXCHANGERS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Locomotive Co., 30 Church St., New York, N. Y.

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.  
 Bethlehem Steel Co., Bethlehem, Penn.  
 J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
 Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif.  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
 D. J. Murray Mfg. Co., Wau-sau, Wis.  
 National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.  
 Ross Heater & Mfg. Co., Inc., 1407 West Ave., Buffalo 13, N. Y.  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y.  
 Southwestern Eng. Co., 4900 Santa Fe Ave., Los Angeles 11, Calif.  
 Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.  
 Struthers Wells Corp., 1003 Pennsylvania Ave., W., Warren, Penn.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.  
 Young Radiator Co., 709 S. Marquette St., Racine, Wis.

**HEAT TREATING MACHINES, Drill Steel**  
 Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

**HEATERS, Concrete Mixers**  
 Aeroll Burner Co., Inc., 13th St. & Park Ave., West New York, N. J.  
 Littleford Bros., Inc., 460 E. Pearl St., Cincinnati, Ohio  
 The Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 Marvel Equipment Co., 224 S. Michigan, Chicago, Ill.

**HEATERS, ELECTRIC, Bitumen**  
 Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis, Mo.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

**HEATERS, Plant, Hot Air**  
 Aeroll Burner Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.  
 American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.  
 Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
 Clarage Fan Co., North & Porter Sts., Kalamazoo 16, Mich.  
 Dravo Corp., Neville Island, Pittsburgh 25, Penn.

Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 D. J. Murray Mfg. Co., Wau-sau, Wis.  
 Young Radiator Co., 709 S. Marquette St., Racine, Wis.

**HELMETS, WELDING**  
 (See Welders Protective Equipment)

**HOISTS, Pneumatic**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
 Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo.  
 Detroit Hoist & Machine Co., 8201 Morrow Ave., Detroit 11, Mich.  
 Gardner-Denver Co., Gardner & First Ave., Quincy, Ill.  
 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y.  
 Morse Bros. Mchry. Co., 2300 Broadway, Denver 1, Colo.  
 Novo Engine Co., 702 Porter St., Lansing, Mich.  
 Stearns-Rogers Mfg. Co., 1720 California St., Denver, Colo.  
 Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

**HOISTS, Gas Dumping**  
 Continental Gin Co., Industrial Div., 4500 5th Ave., S., Birmingham, Ala.  
 Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo.  
 Maddox Fdy. & Machine Wks., Archer Fla.  
 Pressed Steel Car Co., Inc., Industrial Div., 2500 Koppers Bldg., Pittsburgh 30, Penn.  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Wellman Engr. Co., 700 Central Ave., Cleveland 4, Ohio

**HOISTS, Chain**  
 The Cleveland Crane & Eng. Co., Wickliffe, Ohio  
 Columbus McKennon Chain Corp., Tonawanda, N. Y.  
 Conco Eng. Works, Rock Ave., Mendota, Ill.  
 Ford Chain Block Div., American Chain & Cable Co., 2nd & Diamond Sts., Philadelphia 25, Penn.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
 Morse Bros. Mchry. Co., 2300 Broadway, Denver 1, Colo.  
 Wright Mfg. Div., American Chain & Cable Co., York, Penn.  
 The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

**HOISTS, Dredge**  
 American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
 American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
 Clyde Iron Wks., Inc., 29th Ave. W. & Michigan St., Duluth 1, Minn.  
 Flory Mfg. Co., Main Street, Bangor, Penn.  
 Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif.  
 McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y.

Morris Machine Works, Baldwinville, N. Y.  
 Sterling Mchry. Corp., 411 Southwest Blvd., Kansas City, Mo.

**HOISTS, Dump Body**  
 Anthony Co., Inc., Streator, Ill.  
 The Burch Corp., Crestline, Ohio  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 Gallion Allsteel Body Co., 605 S. Market St., Gallion, Ohio  
 Gar Wood Industries, Inc., 7924 Riopelle St., Detroit 11, Mich.  
 The Hell Co., 3000 W. Montana St., Milwaukee 1, Wis.  
 Hercules Steel Products Co., Sherman St., Gallion, Ohio  
 Maddox Foundry & Machine Works, Archer, Fla.  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y.

**HOISTS, Electric**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
 American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
 Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.  
 C. H. & E. Mfg. Co., 3849 N. Palmer St., Milwaukee 12, Wis.  
 Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
 The Cleveland Crane & Eng. Co., Wickliffe, Ohio  
 Clyde Iron Wks., Inc., 29th Ave. W. and Michigan St., Duluth 1, Minn.  
 Columbus McKennon Chain Corp., Tonawanda, N. Y.  
 Conco Engr. Wks., Rock Ave., Mendota, Ill.  
 Construction Machinery Co., Glenwood & Vinton St., Waterloo, Iowa  
 Continental Gin Co., Industrial Div., 4500 - 5th Ave., S., Birmingham, Ala.  
 Detroit Hoist & Machine Co., 8201 Morrow Ave., Detroit 11, Mich.  
 Dobbie Fdry. & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
 Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
 Electro Lift, Inc., 30 Church St., New York 7, N. Y.  
 Flory Mfg. Co., Main St., Bangor, Penn.  
 Godfrey Conveyor Co., Inc., 13th & Wolf, Elkhart, Ind.  
 Goodman Mfg. Co., 4634 S. Halsted, Chicago 9, Ill.  
 Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
 The Hell Co., 3000 W. Montana, Milwaukee, Wis.  
 Joshua Henry Iron Wks., Box 37, Sunnyvale, Calif.  
 The Her-Born Engr. & Mfg. Co., Box 666, Sandusky, Ohio  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y.  
 McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y.  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.  
 Morse Bros. Mchry. Co., 2300 Broadway, Denver 1, Colo.



# DIRECTORY

Novo Engine Co., 702 Porter St., Lansing, Mich.  
O. K. Clutch & Machinery Co., Florence St., Columbia, Penn.  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
Philadelphia Gear Wks., Inc., Erie Ave. & G St., Philadelphia 34, Penn.  
The Sagen Derrick Co., 3101-27 W. Grand Ave., Chicago 22, Ill.  
The Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Sterling Machinery Corp., 411 Southwest Blvd., Kansas City, Mo.  
Street Brothers Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn.  
Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.  
The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.  
The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

## HOISTS, Gasoline

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
C.H. & E. Mfg. Co., 3849 N. Palmer St., Milwaukee 12, Wis.  
Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
Clyde Iron Wks., 29th Ave. W. and Michigan St., Duluth 1, Minn.  
Construction Machinery Co., Glenwood and Vinton St., Waterloo, Iowa  
Dobbie Fdry. & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Flory Mfg. Co., Main St., Bangor, Penn.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif.  
The Her-Born Engr. & Mfg. Co., Box 666, Sandusky, Ohio  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.  
McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y.  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
O. K. Clutch & Machinery Co., Florence St., Columbia, Penn.  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
The Sagen Derrick Co., 3101-27 W. Grand Ave., Chicago 22, Ill.  
Sauermaier Bros., Inc., 530 S. Clinton St., Chicago 7, Ill.  
Six Wheels, Inc., 1559-1584 E. 20th St., Los Angeles 11, Calif.  
Sterling Machinery Corp., 411 Southwest Blvd., Kansas City, Mo.

Street Brothers Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.

## HOISTS, Hydraulic

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
Curtis Mfg. Co., 1988 Klienlen Ave., St. Louis 20, Mo.  
Gallon Allsteel Body Co., 605 S. Market St., Gallon, Ohio  
Gar Wood Industries, Inc., 7924 Reopelle St., Detroit 11, Mich.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
The Hell Co., 3000 W. Montana St., Milwaukee 1, Wis.  
Hercules Steel Products Co., Sherman St., Gallon, Ohio  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Truck Engr. Corp., 1285 W. 70th St., Cleveland 2, Ohio.

## HOISTS, Mine

C. H. & E. Mfg. Co., 3849 N. Palmer St., Milwaukee 12, Wis.  
Clyde Iron Wks., 29th Ave. W. and Michigan St., Duluth 1, Minn.  
Flory Mfg. Co., Main St., Bangor, Penn.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio  
Maddox Fdy. & Machine Wks., Archer, Fla.  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Nordberg Mfg. Co., 3078 So. Chase Ave., Milwaukee 7, Wis.  
Ottumwa Iron Wks., 402 W. Main St., Ottumwa, Iowa  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo.  
The Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.  
Sterling Mchry. Corp., 411 Southwest Blvd., Kansas City, Mo.  
Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind.  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn.  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio.

## HOISTS, Portable, Electric

American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.  
Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
Clyde Iron Wks., 29th Ave. W. & Michigan St., Duluth 1, Minn.  
Columbus McKinnin Chain Corp., Tonawanda, N. Y.  
Conco Engr. Wks., Rock Ave., Mendota, Ill.

Detroit Hoist & Machine Co., 8201 Morrow Ave., Detroit 11, Mich.  
Dobbie Foundry & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Electro Lift, Inc., 30 Church St., New York 7, N. Y.  
Flory Mfg. Co., Main St., Bangor, Penn.  
Ford Chain Block Div., American Chain & Cable Co., 2nd & Diamonds Sts., Philadelphia 25, Penn.  
Godfrey Conveyor Co., 13th & Wolf, Ekhardt, Ind.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Hyster Co., 2938 N.E. Clackamas St., Portland 8, Ore.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Six Wheels, Inc., 1559-1584 E. 20th St., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
Street Brothers Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
Wright Mfg. Div., American Chain & Cable Co., York, Penn.  
The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

## HOISTS, Steam

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Ind.  
Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.  
Clyde Iron Works, 29th Ave. W. & Michigan St., Duluth 1, Minn.  
Flory Mfg. Co., Main St., Bangor, Penn.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.  
Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Ottumwa Iron Wks., 402 W. Main St., Ottumwa, Iowa  
Street Brothers Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn.

## HOISTS, Tractor

Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis.  
Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio  
The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.  
Hyster Co., 2902 N.E., Clackamas St., Portland 8, Ore.  
Pacific Car & Fdy. Co., 4th and Factory St., Renton, Wash.

## HOOKS, Belt (See Belt Fasteners)

## HOOKS, Wire Rope (See Wire Rope Fittings)

## HOPPERS, Aggregates, Cement, etc.

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio.  
Blaw-Knox Co., Blawnox, Penn.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Butler Bin Co., Box 407, Waukesha, Wis.  
The Conveyor Co., Inc., 3280 E. Slauson Ave., Los Angeles 11, Calif.  
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.  
Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
Erie Steel Construction Co., 19th & Geist Road, Erie, Penn.  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Greenville Mfg. Wks., Greenville, Ohio  
Gründler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo.  
George Hals Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Hendrick Mfg. Co., 52 Dundaff St., Carbondale, Penn.  
Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa 168  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill.  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y.  
The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
Morrow Mfg. Co., 722 E. Tenth St., Weirton, Ohio  
Multiplex Concrete Mchry. Co., Elmore, Ohio  
Noble Co., 1860 7th St., Oakland 7, Calif.  
Pioneer Eng. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Standard Steel Corp., 5001 Boyle St., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
Traylor Eng. & Mfg. Co., Aintown, Penn.  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## HOPPERS, Unloading Ready Mixed Concrete

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
Blaw-Knox Co., Blawnox, Penn.  
Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Butler Bin Co., Box 407, Waukesha, Wis.  
The Conveyor Co., Inc., 3280 E. Slauson Ave., Los Angeles 11, Calif.  
Erie Steel Construction Co., Box 1031, Erie, Penn.  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio  
C. S. Johnson Co., Box 71, Champaign, Ill.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

# DIRECTORY

Noble Co., 1980 7th St., Oakland 7, Calif. .... 229	The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. .... 13	The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193	Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn. ....
Ransome-McHry. Co., Dunellen, N. J. ....	Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill. ....	Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. .... 11	Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill. ....
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6	Morris Machine Works, 31 E. Genesee St., Baldwinsville, N. Y. ....	Kritzer Co., 333 N. Michigan Ave., Chicago 1, Ill. ....	Huron Industries, Alpena, Mich. ....
HOSE, Air Drill	Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif. ....	McGann Mfg. Co., P. O. Box 1187, York, Penn. .... 173	Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. .... 11
The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif. ....	Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. .... 171	Omego Machine Co., 9 Codding St., Providence 1, R. I. ....	McGann Mfg. Co., P. O. 1187, York, Penn. .... 173
Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass. ....	The Raybestos Div. of Raybestos-Manhattan, Inc., P. O. Box 1021, Bridgeport 2, Conn. ....	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7	Manitowoc Eng. Works, Manitowoc, Wis. .... 35
The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Station, Cincinnati 12, Ohio .... 222	Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio .... 165	Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8	F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 129
Continental Rubber Works, 1902 Liberty St., Erie, Penn. ....	Sullivan Mchry. Co., Woodland Ave., Michigan City, Ind. ....	INDLERS, Conveyor (See Conveyor Idlers)	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38	Thermold Rubber, Div. of Thermold Co., Whitehead Rd., Trenton 6, N. Y. ....	INDICATORS, Bin (See Bin Level Indicators)	Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo. .... 44	U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y. ....	INSULATING CEMENT (See Cement, Insulating)	KILNS (Curing, Concrete)
Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn. ....	HOSE FITTINGS	INSULATION, Electrical	Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. .... 215
The B. F. Goodrich Co., Akron, Ohio .... 5	Band-It Co., 2536 Walnut St., Denver, Colo. .... 9	General Electric Co., 1 River Rd., Schenectady 5, N. Y. ....	F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 129
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio .... 9	Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass. ....	Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn. ....	KILNS, Lime, Vertical
Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 3, N. Y. ....	Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio ....	INSULATION, Heat	Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo. ....
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill. ....	Continental Rubber Works, 1902 Liberty St., Erie, Penn. ....	A. P. Green Fire Brick Co., 1018 E. Breckenridge, Mexico, Mo. ....	Arnold & Weigel, Inc., Woodville, Ohio ....
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42	Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo. ....	Johns-Manville, 22 E. 40th St., New York 18, N. Y. ....	Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill. ....
Kadco Corp., 36-40 11th St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.) ....	Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia 22, Penn. ....	Quigley Co., 527 Fifth Ave., New York 17, N. Y. ....	Ellerman Co., 203 Continental Bank Bldg., Salt Lake City, Utah .... 225
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. .... 13	Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38	Refractory & Insulation Corp., 120 Wall St., New York 5, N. Y. ....	Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. .... 11
Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif. ....	Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn. ....	The Ruberoid Co., 500 Fifth Ave., New York, N. Y. ....	McGann Mfg. Co., P. O. Box 1187, York, Penn. .... 173
Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. .... 171	The B. F. Goodrich Co., Akron, Ohio ....	Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill. ....	Manitowoc Eng. Works, Manitowoc, Wis. .... 35
The Raybestos Div. of Raybestos-Manhattan, Inc., P. O. Box 1021, Bridgeport 2, Conn. ....	The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio ....	JACKS, HYDRAULIC	Ruggles-Coles Eng. Co., 122 E. 42nd St., New York, N. Y. ....
Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio .... 165	Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 3, N. Y. ....	The Buda Co., 15401 Commercial Ave., Harvey, Ill. .... 33	Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind. ....	Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill. ....	Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. .... 40	KILNS, Rotary, Cement, Gypsum, Lime
Thermold Rubber, Div. of Thermold Co., Whitehead Rd., Trenton 6, N. Y. ....	Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 42	JIGS, Sand and Gravel	Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. ....
U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y. ....	Knox Mfg. Co., 811-823 Cherry St., Philadelphia 7, Penn. .... 232	Allen Cone & Mchry. Corp., 120 Broadway, New York 5, N. Y. ....	C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio ....
HOSE, Water, Steam, Sand, Suction and Discharge	The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J. .... 13	Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. ....	Bethlehem Steel Co., Inc., Bethlehem, Penn. .... 22
The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif. ....	Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill. ....	Denver Equipment Co., 1400 17th St., Denver 17, Colo. .... 31	Bonnot Co., Mulberry Rd. S. E., Canton, Ohio ....
Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass. ....	New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn. .... 237	Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. ....	Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill. ....
The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Station, Cincinnati 12, Ohio .... 222	Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio .... 165	Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis. ....	L. R. Christie Co., 17 E. 42nd St., New York 17, N. Y. ....
Construction Mchry. Co., Glenwood & Vinton Sts., Waterloo, Iowa ....	Sullivan Machinery Co., Woodland Ave., Michigan City, Ind. ....	The Mine & Smelter Supply Co., 1422 17th St., Denver, Colo. ....	Hardings Co., Inc., 240 Arch St., York, Penn. .... 225
Continental Rubber Works, 1902 Liberty St., Erie, Penn. ....	U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y. ....	Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo. ....	Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. .... 11
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo. .... 44	HULLS, Dredge (See Dredges)	Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200	Manitowoc Eng. Works, Manitowoc, Wis. .... 35
Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn. ....	HUMIDIFIERS, Laboratory (See Laboratory Apparatus)	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7	Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo. ....
The B. F. Goodrich Co., Akron, Ohio .... 5	HYDRATORS, Lime	JOIST AND SLAB MACHINES, Concrete	Ruggles-Coles Eng. Co., 122 E. 42nd St., New York, N. Y. ....
The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio .... 9	Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. ....	W. E. Dunn Mfg. Co., 23 W. 24th St., Holland, Mich. ....	F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 129
Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 3, N. Y. ....	Arnold & Weigel, Inc., Woodville, Ohio ....	Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. .... 215	Standard Steel Corp., 3001 S. Boyle Ave., Los Angeles 11, Calif. ....
Kadco Corp., 36-40 11th St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.) ....	Blaw-Knox Co., Blawnox, Penn. .... 245	The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio ....	Struthers Wells Corp., 1003 Pennsylvania Ave., W. Warren, Penn. .... 7
	Builders - Providence, Inc., Div. of Builders Iron Fdy., 9 Codding St., Providence 1, R. I. ....	KETTLES, Gypsum, Calcining	Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7
		J. B. Ehsam, Enterprise, Kan. ....	Vulcan Iron Works, 700 S. Main St., Wilkes-Barre, Penn. .... 8
		H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover	
		KILN CHAIN SYSTEMS (See Heat Exchangers)	
		KILN PARTS, ENDS, ETC.	
		Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. ....	
		American Manganese Steel Div., American Brake Shoe Co., 386 E. 14th St., Chicago Heights, Ill. .... 201	

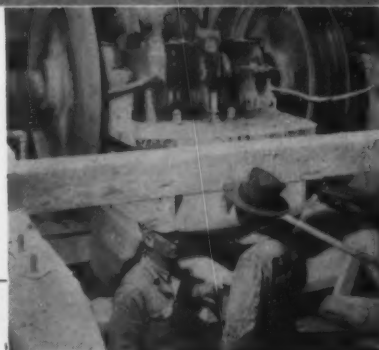


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Barber-Greene Co., 651 W. Park Ave., Aurora, Ill. 175  
Burrell Technical Supply Co., 1936-42 Fifth Ave., Pittsburgh 19, Penn.  
Black & Decker Mfg. Co., 600 E. Penn. Ave., Towson, Md.  
Cambridge Instrument Co., Inc., 3722 Grand Central Terminal, New York 17, N. Y.  
Central Scientific Co., 1702 Irving Park Blvd., Chicago, Ill.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.  
The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
Kron Co., 1720 Fairfield Ave., Bridgeport 7, Conn.  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
The Mines & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.  
Palo Myers, Inc., 81 Reads St., New York 17, N. Y.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231  
Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

## LABORATORIES, Testing

Robert Hunt Co., 175 W. Jackson Blvd., Chicago, Ill.  
H. C. Nutting Co., Cincinnati, Ohio  
Pittsburgh Testing Laboratory, Stevenson St., Pittsburgh, Penn.

## LACING, Belt (See Belt Lacing)

## LADDERS, Dredge

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
American Steel Dredge Co., Inc., 2511 W. Taylor St., Ft. Wayne, Ind.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th Cover  
Eagle Iron Works, 129 Holcomb Ave., Des Moines, Iowa 205  
Greenville Mfg. Wks., Greenville, Ohio  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Maddox Foundry & Machine Works, Archer, Fla.  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morris Machine Works, 31 E. Genesee St., Baldwinville, N. Y.  
Pacific Car & Fdry Co., 4th and Factory St., Renton, Wash.

## LARRIES, WEIGH

(See Weigh Larries)

## LAUNDERS (See Chutes)

## LIFT TRUCKS, Concrete Products, etc.

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.

Besser Mfg. Co., Alpena, Mich. 211  
Clark Tractor Div. Clark Equipment Co., Battle Creek, Mich.  
Easton Car & Construction Co., Box 270, Easton, Penn.  
The Elwell Parker Elec. Co., 4205 St. Clair Ave., Cleveland 14, Ohio  
Erickson Special Equipment Mfg. Co., 2631 Ulysses N. E., Minneapolis 13, Minn.  
Gar Wood Industries, Inc., 7824 Reopelle St., Detroit 11, Mich.  
Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon  
Lewis-Shepard Sales Corp., Watertown, Mass.  
Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
Stearns Mfg. Co., Inc., Adrian Mich. 208  
Towmotor Corp., 1226 E. 152nd Street, Cleveland 10, Ohio  
The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

## LIGHTERS, Fuse (See Blasting Supplies)

## LIME HANDLING EQUIPMENT

Arnold & Weigel, Inc., Woodville, Ohio  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Continental Gin Co., Industrial Div., 4600 5th Ave., So., Birmingham, Ala. 233  
Fuller Co., Fuller Bldg., Castasqua, Penn. 14, 15  
The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.  
Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.  
The Jeffrey Mfg. Co., 935-99 4th St., Columbus 16, Ohio 51  
C. B. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
McGann Mfg. Co., P. O. Box 1187, York, Penn. 173  
Omega Machine Co., 9 Coding St., Providence 1, R. I.  
Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. 30  
Webster Mfg. Inc., Tiffin, Ohio  
Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

## LIME KILNS (See Kilns)

## LIME AND LIMESTONE SPREADERS

Anthony Co., Inc., Streator, Ill.  
Baughman Mfg. Co., 116 E. Arch, Jerseyville, Ill. 237  
Even Spread Spreader Co., Owensville, Ohio  
Flink Company, 502 N. Vermillion St., Streator, Ill.  
Highway Equipment Co., 128 D. Avenue N.W., Cedar Rapids, Iowa 254  
New Idea, Inc., Coldwater, Ohio  
Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

## LIME MORTAR & PUTTY PLANTS

Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.

## LIME PLANTS

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee, Wis.  
Arnold & Weigel, Inc., Woodville, Ohio  
Ellerman Co., 203 Continental Bank Bldg., Salt Lake City, Utah  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Iowa Mfg. Co., 916 16th St., N. E., Cedar Rapids, Iowa. 166  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
Kritzer Co., 333 N. Michigan Ave., Chicago 1, Ill.  
McGann Mfg. Co., P. O. Box 1187, York, Penn. 173  
Raymond Pulverizer Division, Combustion Engr. Co., Inc., 1319 N. Branch St., Chicago 22, Ill. 18, 19  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 39  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8  
Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. 29

## LINERS, Kiln (See Fire Brick, Brick)

## LINERS, METAL, Grinding Mills

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee, Wis.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
Audubon Wire Cloth Corp., (Subsidiary of Manganese Steel Forge Co.) Richmond St. & Castor Ave., Philadelphia, Penn.  
The Babcock & Wilcox Co., 85 Liberty St., New York, N. Y. 62  
Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
The Elmco Corp., P. O. Box 300, Salt Lake City, Utah  
Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland, Ore.  
The Frog, Switch & Mfg. Co., Carlisle, Penn. 243  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York City, N. Y. 10 & 11  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.  
The Pennebacker Co., 4th and Furnace Sts., Emmons, Penn.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd cover  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128 & 129  
Straub Mfg. Co., 507 Chestnut, Oakland 7, Calif.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8

## LINERS, Pump (Metal)

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
The Babcock & Wilcox Co., 85 Liberty St., New York, N. Y. 62  
The Galigher Co., 48 So. 2nd East St., Salt Lake City 1, Utah  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morris Machine Wks., Baldwinville, N. Y.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Taylor-Wharton Iron & Steel Co., High Bridge, N. J. 16

## LININGS, CHUTE (See Chute Linings)

## LOADERS, Boat

A. B. Farquhar Co., Ltd. (Portable Machinery Div.), N. Duke St., York, Penn.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Wellman Eng. Co., 7000 Central Ave., Cleveland 4, Ohio 281  
The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

## LOADERS, Car

Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.  
Atlas Conveyor Co., 15th St., Clintonville, Wis.  
The Burch Corp., Crestline, Ohio  
Diamond Iron Wks., Inc., and The Mahr Mfg. Co. Div., 1900 N. 2nd St., Minneapolis 11, Minn. 247  
The Elmco Corp., P. O. Box 300, Salt Lake City 6, Utah  
A. B. Farquhar Co., Ltd. (Portable Machinery Div.), N. Duke St., York, Penn.  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. 33  
Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Link-Belt Co., 2046 W. Hunting Park Ave., Philadelphia 40, Penn. 1  
Lippmann Eng. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
Manierre Engr. & Machinery Co., 739 N. Milwaukee St., Milwaukee, Wis.  
Ottumwa Box Car Loader Inc., P. O. Box 417, Ottumwa, Iowa  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

## LOADERS, Tractor

Allis-Chalmers Tractor Div., 1128 S. 70th St., Milwaukee, Wis. 24  
Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.  
Bucyrus Erie Co., P. O. Box 56, South Milwaukee, Wis. 4th Cover

The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.  
 Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.  
 Lima Locomotive Works, Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio ..... 235  
 Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
 Ottawa Steel Prod. Inc., Ottawa, Kan.  
 Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis. .... 27  
 The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia, Penn.

**LOADERS, Truck (See also Bucket Loaders)**

Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.  
 Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. .... 175  
 Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio  
 Eagle Crusher Co., Inc., 900 Harding Way East, Gallon, Ohio ..... 25  
 The Elmco Corp., P. O. Box 300, Salt Lake City 5, Utah  
 A. B. Farquhar Co., Ltd. (Portable Machinery Div.), N. Duke St., York, Penn.  
 Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.  
 George Hais Mfg. Co., Inc., 351 Canal Fl., New York 51, N. Y.  
 Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio ..... 23  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn. .... 1  
 Lippmann Eng. Works, 4603 W. Mitchell St., Milwaukee 14, Wis.  
 N. P. Nelson Iron Works, Inc., 820 Bloomfield Ave., Clifton, N. J.  
 New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226  
 Sauerman Bros., Inc., 530 S. Clinton St., Chicago 7, Ill. .... 230  
 The Yale & Towne Mfg. Co., Phila. Div., 4530 Tacony St., Philadelphia 24, Penn.

**LOADERS, Underground**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 The Elmco Corp., P. O. Box 300, Salt Lake City 5, Utah  
 Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. .... 38  
 Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 Rogers Iron Wks. Co., 11th & Pearl, Joliet, Mo. .... 290  
 Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

**LOCOMOTIVES, Diesel**

American Locomotive Co., 30 Church St., New York, N. Y.  
 Brookville Locomotive Wks., Brookville, Penn.  
 The Cooper-Bessemer Corp., Mt. Vernon, Ohio  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 8, Ill.

The Fate-Root-Heath Co., Plymouth, Ohio ..... 43  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 Plymouth Locomotive Works, 607 Riggs Ave., Plymouth, Ohio ..... 43  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Diesel-Electric**

American Locomotive Co., 30 Church Street, New York, N. Y.  
 The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Baldwin Locomotive Wks., 940 Simpson St., Eddystone, Penn.  
 Brookville Locomotive Wks., P. O. Box 26, Brookville, Penn.  
 The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
 The Fate-Root-Heath Co., Plymouth, Ohio ..... 43  
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
 Heisler Locomotive Wks., Erie, Penn.  
 Plymouth Locomotive Wks., 607 Riggs Ave., Plymouth, Ohio ..... 43  
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 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 Westinghouse Elec. & Mfg. Co., Hill St., E. Pittsburgh, Penn.  
 The Whitcomb Locomotive Co., Rochelle, Ill.

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American Locomotive Co., 30 Church Street, New York, N. Y.  
 The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Baldwin Locomotive Wks., 940 Simpson St., Eddystone, Penn.  
 Differential Steel Car Co., Findlay, Ohio  
 The Fate-Root-Heath Co., Plymouth, Ohio ..... 43  
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.  
 Goodman Mfg. Co., 4834 S. Halsted, Chicago 9, Ill.  
 Heisler Locomotive Wks., Erie, Penn.  
 The Jeffrey Mfg. Co., 935-99 W. 4th St., Columbus 16, Ohio ..... 51  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 Plymouth Locomotive Wks., 607 Riggs Ave., Plymouth, Ohio ..... 43  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Gasoline**

Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Brookville Locomotive Wks., P. O. Box 26, Brookville, Penn.

Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Differential Steel Car Co., Findlay, Ohio  
 The Fate-Root-Heath Co., Plymouth, Ohio ..... 43  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 Heisler Locomotive Works, Erie, Penn.  
 Plymouth Locomotive Wks., 607 Riggs Ave., Plymouth, Ohio ..... 43  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Gasoline-Electric**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Differential Steel Car Co., Findlay, Ohio  
 The Fate-Root-Heath Co., Plymouth, Ohio ..... 43  
 Heisler Locomotive Works, Erie, Penn.  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 Plymouth Locomotive Wks., 607 Riggs Ave., Plymouth, Ohio ..... 43  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Kerosene**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland, Ohio  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Brookville Locomotive Wks., P. O. Box 26, Brookville, Penn.  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Oil**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland, Ohio  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Brookville Locomotive Wks., P. O. Box 26, Brookville, Penn.  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 The Fate-Root-Heath Co., 607 Bell St., Plymouth, Ohio ..... 43  
 Plymouth Locomotive Wks., 607 Riggs Ave., Plymouth, Ohio ..... 43  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Oil-Electric**

American Locomotive Co., 30 Church St., New York, N. Y.  
 The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Heisler Locomotive Works, Erie, Penn.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOCOMOTIVES, Steam**

American Locomotive Co., 30 Church St., New York, N. Y.  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 Davenport Besler Corp., 2305 Rockingham Road, Davenport, Iowa  
 Heisler Locomotive Works, Erie, Penn.  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. .... 8

**LOCOMOTIVES, Storage Battery**

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Baldwin Locomotive Wks., 940 Simpson Street, Eddystone, Penn.  
 General Electric Co., 1 River Road, Schenectady 5, N. Y.  
 Goodman Manufacturing Co., 4834 S. Halsted, Chicago 9, Ill.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd cover  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.  
 The Whitcomb Locomotive Co., Rochelle, Ill.

**LOG WASHERS, Aggregates (See also Scrubbers)**

Allen Cone & Mchry. Corp., 120 Broadway, New York 5, N. Y.  
 Allis-Chalmers Mfg. Co., 1945 Prodcod St., Milwaukee, Wis.  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
 Eagle Iron Works, 129 Holcomb Ave., Des Moines, Ia. 205  
 Georgia Iron Works, 605 Twelfth St., Augusta, Ga.  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. 166  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
 Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill. .... 1  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45

# DIRECTORY

Maddox Fdy. & Machine Wks., Archer, Fla.  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn.  
 Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo.  
 Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
 Smith Eng. Works, 532 E. Capitol Dr., Milwaukee 12, Wis.  
 Stephens-Adamsen Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
 Traylor Engr. & Mfg. Co., Allentown, Penn.  
 Universal Eng. Corp., 625 C Ave., W., Cedar Rapids, Iowa  
 The Webb Corp., 402 E. Broadway, Webb City, Mo.  
**LUBRICANTS, Grease, Oil, etc.**  
 Acheson Colloids Corp., Port Huron, Mich.  
 Continental Oil Co., Ponca, Okla.  
 Flske Brothers Refining Co., Lubriplate Div., 129 Lockwood St., Newark 15, N. J.  
 Gredag, Inc., P. O. Box 898, Niagara Falls, N. Y.  
 Gulf Oil Corp., P. O. Box 1166, Pittsburgh 30, Penn.  
 Hodson Corp., 5301-11 W. 66th St., Chicago, Ill.  
 E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Penn.  
 Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.  
 MacMillan Petroleum Co., 530 W. Sixth St., Los Angeles, Calif.  
 New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, N. Y.  
 Pure Oil Co., 35 E. Wacker Drive, Chicago 1, Ill.  
 Richfield Oil Corp. of New York, 19 W. 50th St., New York 20, N. Y.  
 Shell Oil Co., 50 West 50th St., New York, N. Y.  
 Sinclair Refining Co., 573 W. Peachtree St., Atlanta, Ga.  
 Sinclair Refining Co., 630 Fifth Ave., New York, N. Y.  
 Socony Vacuum Oil Co., Inc., 26 Broadway, New York City, N. Y.  
 Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.  
 Standard Oil Co., (New Jersey) 26 Broadway, New York, N. Y.  
 Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill.  
 Stewart-Warner Corp., (Alomite Corp.) 1826 W. Diversey Pkwy., Chicago, Ill.  
 Sun Oil Co., 1608 Walnut St., Philadelphia, Penn.  
 The Texas Co., 135 East 42nd St., New York 17, N. Y.  
 Tide Water Associated Oil Co., 17 Battery Place, New York 4, N. Y.  
**LUBRICANTS, Wire Rope**  
 Acheson Colloids Corp., Port Huron, Mich.  
 Continental Oil Co., Ponca, Okla.  
 Flske Brothers Refining Co., Lubriplate Div., 129 Lockwood St., Newark 15, N. J.  
 Gredag, Inc., P. O. Box 898, Niagara Falls, N. Y.  
 Gulf Oil Corp., P. O. Box 1166, Pittsburgh 30, Penn.  
 Hodson Corp., 5301-11 W. 66th St., Chicago, Ill.

E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Penn.  
 Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.  
 A. Leschen & Sons Rope Co., 5909 Kennerly Ave., St. Louis 12, Mo.  
 New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, N. Y.  
 Pure Oil Co., 35 E. Wacker Drive, Chicago 1, Ill.  
 John A. Roebing's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 Shell Oil Co., 50 West 50th St., New York, N. Y.  
 Sinclair Refining Co., 573 W. Peachtree St., Atlanta, Ga.  
 Sinclair Refining Co., 630 Fifth Ave., New York, N. Y.  
 Standard Oil Co., of California, 225 Bush St., San Francisco 20, Calif.  
 Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill.  
 Standard Oil Co. (New Jersey), 26 Broadway, New York, N. Y.  
 Stewart-Warner Corp., 1826 W. Diversey Pkwy., Chicago, Ill.  
 The Texas Co., 135 East 42nd St., New York 17, N. Y.  
**LUBRICATING SYSTEMS**  
 Gray Co., Inc., 60 11th Ave., N. E., Minneapolis, Minn.  
 Hills McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.  
 Hodson Corp., 5301-11 W. 66th St., Chicago, Ill.  
 Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.  
 Lincoln Eng. Co., 5701 National Bridge, St. Louis 20, Mo.  
 Oil-Rite Corp., 3420 S. 13th St., Milwaukee 7, Wis.  
 Stewart-Warner Corp., 1826 W. Diversey Pkwy., Chicago, Ill.  
**MAGNETIC SEPARATORS**  
 Dings Magnetic Separator Co., 509 E. Smith St., Milwaukee 7, Wis.  
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio  
 Prater Pulverizer Co., 1829 S. 55th Ave., Chicago 50, Ill.  
 Separations Eng. Corp., 110 E. 42nd St., New York 17, N. Y.  
 Sprout, Waldron & Co., Muncy, Penn.  
 Stearns Magnetic Mfg. Co., 675 S. 28th St., Milwaukee 4, Wis.  
 The Stearns-Roger Mfg. Co., 1718-1722 California St., Denver 2, Colo.  
**MANGANESE STEEL PARTS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.  
 Audubon Wire Cloth Corp., (Subsidiary of Manganese Steel Forge Co.) Richmond St. & Castor Ave., Philadelphia, Penn.  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.  
 Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
 Bethlehem Steel Co., Bethlehem, Penn.  
 Blaw-Knox Company, Blawnox, Penn.

Electric Steel Fdry. Co., 2141 N. W. 25th Ave., Portland 10, Oregon.  
 The Frog, Switch & Mfg. Co., Carlisle, Penn.  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Avenue Bldg., New York, N. Y.  
 Kensington Steel Co., 505 Kensington Ave., Chicago, Ill.  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.  
 Stutz-Sickles Co., 134 Lafayette St., Newark 5, N. J.  
 Taylor-Wharton Iron & Steel Co., High Bridge, N. J.  
 Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.  
**MANHOLE COVER AND FRAME FORMS, Concrete**  
 Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.  
 McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.  
 Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.  
 Pacific Car & Fdry. Co., 4th and Factory St., Renton, Wash.  
**MASONRY COLORS**  
 American Fluorescent Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
 Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
 Ricketson Mineral Color Works, 229 East Wisconsin Ave., Milwaukee, Wis.  
 Tamms Silica Co., 228 N. La Salle St., Chicago 1, Ill.  
 Utility Color Co., 377-99 Frelinghuysen Ave., Newark 5, N. J.  
**MASONRY SAWS**  
 Clipper Mfg. Co., 4030 Manchester St., St. Louis, Mo.  
 D. J. Murray Mfg. Co., Wausau, Wis.  
**MEASURING DEVICES**  
 (See also Weighing Equipment)  
 Anchor Concrete Mch. Co., 1191 Fairview Ave., Columbus 8, Ohio  
 Blaw-Knox Co., Blawnox, Penn.  
 Erie Steel Const. Co., 19th & Geist Road, Erie, Penn.  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Hardinge Co., 240 Arch St., York, Penn.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
 Kennedy-Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York City, N. Y.  
 Kron Co., 1720 Fairfield Ave., Bridgeport 5, Conn.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
 Merrick Scale Mfg. Co., 180-186 Autumn St., Passaic, N. J.  
 Neptune Meter Co., 50 W. 50th St., New York, N. Y.  
 Richardson Scale Co., 1939 Bandstra St., Clifton, N. J.  
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

**MECHANICAL RUBBER GOODS**  
 The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif.  
 Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass.  
 Chicago Belting Co., 113-125 N. Green St., Chicago 7, Ill.  
 The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Station, Cincinnati 12, Ohio  
 Continental Rubber Works, 1903 Liberty St., Erie, Penn.  
 The Dayton Rubber Mfg. Co., 2343 W. Riverview Ave., Dayton 1, Ohio  
 The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.  
 Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn.  
 The B. F. Goodrich Co., Akron, Ohio  
 The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio  
 Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.  
 The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.  
 Manson Glover, 213 Pleasant, Stoughton, Mass.  
 Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.  
 Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.  
 Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown 1, Ohio  
 Thermoid Rubber, Div. of Thermoid Co., Whitehead Rd., Trenton 6, N. J.  
 United States Rubber Co., 1230 6th Ave., New York 20, N. Y.  
**METERS, Electric, Water**  
 Bristol Co., Waterbury 91, Conn.  
 Builders - Providence, Inc., Div. of Builders Iron Fdy., 9 Coddling St., Providence 1, R. I.  
 General Electric Co., 1 River Road, Schenectady 5, N. Y.  
 Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
 Wheelco Instrument Co., 847 W. Harrison St., Chicago 7, Ill.  
**METERS, Fluid**  
 Automatic Liquid Meter Co., 1372 E. 15th St., Los Angeles 21, Calif.  
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio  
 Builders - Providence, Inc., Div. of Builders Iron Fdy., 9 Coddling St., Providence, R. I.  
 Hetherington & Berner Inc., 101 Kentucky Ave., Indianapolis 7, Ind.  
 Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.  
 Wheelco Instrument Co., 847 W. Harrison St., Chicago 7, Ill.  
**MILLS, Ball**  
 Allen Cone & Mch. Corp., 120 Broadway, New York 5, N. Y.  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 The Bonnot Co., Mulberry Rd., S.E., Canton, Ohio  
 Colorado Iron Wks. Co., 1624 17th St., Denver 2, Colo.  
 Denver Equipment Co., 1400 17 St., Denver 17, Colo.



# DIRECTORY

<p>The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah</p> <p>Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.</p> <p>Hardinge Co., Inc., 240 Arch St., York, Penn., 225</p> <p>Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif., 47</p> <p>International Engr., Inc., Bolander Ave., Dayton 1, Ohio</p> <p>Kennedy-Van Saun Mfg. &amp; Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10 &amp; 11</p> <p>The Mine &amp; Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.</p> <p>Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p> <p>Palo Myers Inc., 81 Reade St., New York 17, N. Y.</p> <p>H. K. Porter Co., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Prater Pulverizer Co., 1829 S. 55th Ave., Chicago 50, Ill.</p> <p>Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn., 92</p> <p>Raymond Pulverizer Div., Combustion Engr. Co., Inc., 1319 N. Branch St., Chicago 22, Ill., 18, 19</p> <p>F. L. Smidth &amp; Co., 60 E. 42nd St., New York 17, N. Y., 128, 129</p> <p>The Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.</p> <p>Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.</p> <p>Struthers Wells Corp., 1003 Pennsylvania Ave. W., Warren, Penn.</p> <p>Traylor Engr. &amp; Mfg. Co., Allentown, Penn., 7</p> <p>Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn., 8</p>	<p>International Pulverizer Corp., New Albany Rd., Moorestown, N. J.</p> <p>Kennedy-Van Saun Mfg. &amp; Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11</p> <p>The Mine &amp; Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.</p> <p>Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p> <p>Palo Myers Inc., 81 Reade St., New York 17, N. Y.</p> <p>H. K. Porter Co., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Prater Pulverizer Co., 1829 S. 55th Ave., Chicago 50, Ill.</p> <p>Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn., 92</p> <p>Raymond Pulverizer Div., Combustion Engr. Co., Inc., 1319 N. Branch St., Chicago 22, Ill., 18, 19</p> <p>F. L. Smidth &amp; Co., 60 E. 42nd St., New York 17, N. Y., 128, 129</p> <p>The Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.</p> <p>Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.</p> <p>Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass., 39</p> <p>Traylor Engr. &amp; Mfg. Co., Allentown, Penn., 7</p> <p>Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn., 8</p> <p>Williams Patent Crusher &amp; Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo., 29</p>	<p>Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill., 1</p> <p>Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.</p> <p>H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Simplicity System Co., Riverside Drive, Chattanooga, Tenn.</p> <p>Traylor Engr. &amp; Mfg. Co., Allentown, Penn., 7</p>	<p>MILLS (Coal)</p> <p>Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.</p> <p>The Babcock &amp; Wilcox Co., 85 Liberty St., New York 6, N. Y., 62</p> <p>Gruendler Crusher &amp; Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo., 177</p> <p>Hardinge Co., Inc., 240 Arch St., York, Penn., 225</p> <p>The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio, 51</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p> <p>Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn., 92</p> <p>Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago 22, Ill., 18, 19</p> <p>F. L. Smidth &amp; Co., 60 E. 42nd St., New York 17, N. Y., 128, 129</p> <p>Strong-Scott Mfg. Co., Taft &amp; Kennedy St., Minneapolis, Minn.</p> <p>Whiting Corp., 157th St. &amp; Lathrop Ave., Harvey, Ill.</p> <p>Williams Patent Crusher &amp; Pulverizer Co., 2701 North Broadway, St. Louis 6, Mo., 29</p>
<p>MILLS, Blade, Washing</p> <p>Lewistown Fdy. &amp; Machine Co., Lewistown, Penn.</p> <p>McLanahan &amp; Stone Corp., 200 Wall St., Hollidaysburg, Penn., 45</p> <p>Maddox Fry &amp; Machine Wks., Archer, Fla.</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p> <p>Traylor Engr. &amp; Mfg. Co., Allentown, Penn., 7</p>	<p>MILLS (Laboratory)</p> <p>American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo., 37</p> <p>Burrell Technical Supply Co., 1936-42 5th Ave., Pittsburgh 19, Penn.</p> <p>Denver Equipment Co., 1400 17th St., Denver 17, Colo., 31</p> <p>Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.</p> <p>The Galigher Co., 48 S. Second East St., Salt Lake City 1, Utah</p> <p>International Engr., Inc., Bolander Ave., Dayton 1, Ohio</p> <p>The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio, 51</p> <p>The Mine &amp; Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.</p> <p>Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.</p> <p>H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Prater Pulverizer Co., 1829 S. 55th Ave., Chicago 50, Ill.</p> <p>Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago 22, Ill., 18, 19</p> <p>Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.</p> <p>Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass., 39</p> <p>Williams Patent Crusher &amp; Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo., 29</p>	<p>MILLS (Roll)</p> <p>The Babcock &amp; Wilcox Co., 85 Liberty St., New York, N. Y., 62</p> <p>Bradley Pulverizer Co., 123 So. 3rd St., Allentown, Penn., 243</p> <p>Columbia Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.</p> <p>The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio, 51</p> <p>H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass., 39</p>	<p>MILLS, Hammer</p> <p>(See Crushers, Hammer)</p>
<p>MILLS, Compartment</p> <p>Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.</p> <p>Hardinge Co., Inc., 240 Arch St., York, Penn., 225</p> <p>Kennedy-Van Saun Mfg. &amp; Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p> <p>F. L. Smidth &amp; Co., 60 E. 42nd St., New York 17, N. Y., 128, 129</p> <p>Traylor Engr. &amp; Mfg. Co., Allentown, Penn., 7</p> <p>Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn., 8</p>	<p>MILLS (Pug)</p> <p>Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee, Wis.</p> <p>The Bonnot Co., Mulberry Rd., S. E., Canton, Ohio</p> <p>International Engr., Inc., Bolander Ave., Dayton 1, Ohio</p> <p>Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa 166</p> <p>Kennedy-Van Saun Mfg. &amp; Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11</p>	<p>MILLS (Tube)</p> <p>Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee, Wis.</p> <p>The Bonnot Co., Mulberry Rd., S. E., Canton, Ohio</p> <p>Colorado Iron Wks. Co., 1624 17th St., Denver 2, Colo.</p> <p>The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah</p> <p>Groch Engineering Co., 628 W. 9th St., Los Angeles 15, Calif.</p> <p>Hardinge Co., Inc., 240 Arch St., York, Penn., 225</p> <p>International Engr., Inc., Bolander Ave., Dayton 1, Ohio</p> <p>Kennedy-Van Saun Mfg. &amp; Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11</p> <p>The Mine &amp; Smelter Supply Co., P. O. Box 5270, Terminal Station, Denver 17, Colo.</p> <p>Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.</p> <p>Nordberg Process Mchry. Co., Cleveland, Ohio</p>	<p>MIXER BODIES, Truck</p> <p>(See Bodies)</p>
<p>MILLS, Grinding</p> <p>Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.</p> <p>The Babcock &amp; Wilcox Co., 85 Liberty St., New York 6, N. Y., 62</p> <p>The Bonnot Co., Mulberry Rd., S. E., Canton, Ohio</p> <p>Bradley Pulverizer Co., 123 S. 3rd St., Allentown, Penn., 243</p> <p>Denver Equipment Co., 1400 17th St., Denver 17, Colo., 31</p> <p>Dixie Mchry. Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo., 195</p> <p>The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah</p> <p>Enterprise Engine &amp; Fdy. Co., 18th &amp; Florida Sts., San Francisco 10, Calif.</p> <p>Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.</p> <p>Hardinge Co., Inc., 240 Arch St., York, Penn., 225</p> <p>International Engr., Inc., Bolander Ave., Dayton 1, Ohio</p>	<p>MIXERS, Concrete</p> <p>(See Concrete Mixers)</p>	<p>MIXERS, Plaster</p> <p>Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis., 223</p> <p>Concrete Transport Mixer Co., 659 Rosedale Ave., St. Louis 12, Mo., 219</p> <p>Construction Machinery Co., Glenwood &amp; Vinton St., Waterloo, Iowa</p> <p>Gilson Bros Co., Fredonia, Wis., 245</p> <p>Gruendler Crusher &amp; Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo., 177</p> <p>Jaeger Machine Co., 650 W. Spring St., Columbus 16, Ohio, 23</p> <p>Koehring Co., 30th &amp; Concordia Ave., Milwaukee, Wis., 256</p> <p>Multiplex Concrete Mchry. Co., Elmore, Ohio, 217</p> <p>Patterson Fdy. &amp; Mach. Co., St. George St., East Liverpool, Ohio</p> <p>H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn., 2nd Cover</p> <p>Ransome Mchry. Co., Dunellen, N. J.</p> <p>Stearns Mfg. Co., Inc., Adrian, Mich., 206</p> <p>Straub Mfg. Co., 507 Chestnut St., Oakland 7, Calif.</p>	<p>MIXERS, Pugmill</p> <p>Barber-Greene Co., 631 W. Park Ave., Aurora, Ill., 175</p> <p>The Bonnot Co., Mulberry Rd., S. E., Canton, Ohio</p> <p>Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis., 223</p>

# DIRECTORY

Continental Gin Co., Indus-  
trial Div., 4500 5th Ave.,  
So. Birmingham, Ala. 233  
The F. D. Cumber & Son  
Co., E. 17th and Euclid  
Ave., Cleveland 15, Ohio.  
Grunders Crusher & Pulver-  
izer Co., 2915-17 N. Market  
St., St. Louis, Mo. 177  
Hetherington & Berner, Inc.,  
701 Kentucky Ave., Indian-  
apolis 7, Ind.  
Iowa Mfg. Co., 916 16th St.  
N.E., Cedar Rapids, Iowa. 166  
International Engr., Inc.,  
Boland Ave., Dayton 1,  
Ohio.  
Jaeger Machine Co., 550 W.  
Spring St., Columbus 16,  
Ohio 23  
Lancaster Iron Wks., Inc.,  
550 S. Prince St., Lancast-  
er, Penn. 1  
Link-Belt Co., 2410 W. 18th  
St., Chicago 8, Ill. 1  
The McCarter Iron Wks.,  
Inc., Mill & Washington  
Sts., Norristown, Penn.  
Madsen Iron Wks., 5631  
Bickett St., Huntington  
Park, Calif.  
Pioneer Engr. Wks., Inc.,  
1515 Central Ave., Minne-  
apolis 13, Minn. 227  
H. K. Porter Co., Inc., 1932  
Oliver Bldg., Pittsburgh,  
Penn. 2nd Cover  
W. A. Riddell Corp., Bucy-  
rus, Ohio.  
Simplicity System Co., River-  
side Drive, Chattanooga,  
Tenn.  
Standard Steel Corp., 5001  
So. Boyle Ave., Los An-  
geles 11, Calif.  
Warren Brothers Roads Co.,  
38 Memorial Drive, Cam-  
bridge 42, Mass.  
**MIXERS, Slurry**  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
The Bonnot Co., Mulberry  
Rd. S.E., Canton, Ohio.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee, Wis. 223  
The Dorr Co., 570 Lexington  
Ave., New York 22, N. Y. 193  
International Engr., Inc.,  
Boland Ave., Dayton 1,  
Ohio.  
Madsen Iron Wks., 5631  
Bickett St., Huntington  
Park, Calif.  
Manitowoc Engr. Wks.,  
Manitowoc, Wis. 35  
Omega Machine Co., 9 Cod-  
ding St., Providence 1, R. I.  
H. K. Porter Co., Inc., 1932  
Oliver Bldg., Pittsburgh,  
Penn. 2nd Cover  
W. A. Riddell Corp., Bucy-  
rus, Ohio.  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y. 129  
Struthers Wells Corp., 1003  
Pennsylvania Ave., West  
Warren, Penn.  
**MOLDS, Briquette, Cement**  
(See Laboratory Appar-  
atus)  
**MONITORS, Hydraulic Strip-  
ping, Excavating**  
Allied Steel Products, Inc.,  
1721 N. B. C. Bldg., Cleve-  
land 14, Ohio.  
Georgia Iron Works, 605 12th  
St., Augusta, Ga.  
Joshua Hendy Iron Wks.,  
Box 37, Sunnyvale, Calif. 47  
**MORTAR COLORS**  
E. I. DuPont de Nemours &  
Co., Inc., Nemours Bldg.,  
Wilmington 98, Del. 57  
Lasting Products Co., 200 S.  
Franklin Ave., Balti-  
more 23, Md.  
Geo. S. Mephram Corp., E.  
St. Louis, Mo.

Ricketson Mineral Color  
Works, 229 Wisconsin Ave.,  
Milwaukee 2, Wis.  
Tamm's Silica Co., 228 N.  
La Salle St., Chicago 1, Ill.  
Utility Color Co., 377 Frei-  
linghuysen Ave., Newark 5,  
N. J.  
**MORTAR MIXERS**  
C. H. & E. Mfg. Co., 3849  
W. Palmer St., Milwau-  
kee 12, Wis.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee, Wis. 223  
Concrete Transport Mixer  
Co., 650 Rosedale Ave.,  
St. Louis 12, Mo. 219  
Gilson Bros. Co., Fredonia,  
Wis. 245  
Jaeger Machine Co., 550 W.  
Spring St., Columbus 16,  
Ohio 23  
Lasting Products Co., 200 S.  
Franklin Ave., Balti-  
more 23, Md.  
Multiplex Concrete Mch.  
Co., Elmore, Ohio 217  
H. K. Porter Co., Inc., 1932  
Oliver Bldg., Pittsburgh,  
Penn. 2nd Cover  
**MOTOR TRUCK CONCRETE  
MIXERS (See Bodies)**  
**MOTOR TRUCK DRIVES  
AND DIFFERENTIALS,  
Special**  
Chicago Belting Co., 113 N.  
Green St., Chicago 7, Ill.  
Four Wheel Drive Auto Co.,  
Clintonville, Wis.  
Pacific Car & Fdy. Co., 4th  
& Factory Sts., Renton,  
Wash.  
**MOTOR TRUCKS**  
The Autocar Co., Ardmore,  
Penn.  
Chevrolet Motor Div. of Gen-  
eral Motors Corp., General  
Motors Bldg., Detroit,  
Mich.  
Continental Motors Corp.,  
Detroit, Mich.  
Diamond "T" Motor Car Co.,  
4401 W. 26th St., Chicago  
23, Ill.  
Dodge Div. of Chrysler Corp.,  
7900 Campau, Detroit,  
Mich.  
Dart Truck Co., 27th & Oak  
Sts., Kansas City, Mo.  
The Euclid Road Machinery  
Co., 1361 Chardon Road,  
Cleveland, Ohio  
Federal Motor Truck Co.,  
5780 Federal St., Detroit,  
Mich.  
Ford Motor Co., 3574 Schae-  
fer Rd., Dearborn, Mich.  
Four Wheel Drive Auto Co.,  
Clintonville, Wis.  
Gar Wood Industries, Inc.,  
7924 Ropelle St., Detroit,  
Mich.  
General Motors Truck &  
Coach Div., Yellow Truck  
& Coach Mfg. Co., South  
Blvd., Pontiac, Mich.  
The Hug Co., 6th St., High-  
land, Ill.  
International Harvester Co.,  
180 N. Michigan Ave., Chi-  
cago 1, Ill.  
Koehring Co., 3026 W. Con-  
cordia Ave., Milwaukee, Wis. 256  
Mack Trucks Inc., 350 Fifth  
Ave., New York 1, N. Y.  
Marmon-Herrington Co., 1511  
W. Washington St., Indian-  
apolis, Ind.  
Oshkosh Motor Truck Inc.,  
2302 Oregon St., Oshkosh,  
Wis.  
Pacific Car & Fdy. Co., 4th  
& Factory St., Renton,  
Wash.  
Reo Motors, Inc., 1331 South  
Washington Ave., Lansing,  
Mich.  
Six Wheels Inc., 1539-1584 E.  
20th St., Los Angeles 11,  
Calif.

Sterling Motor Truck Co.,  
2021 S. 54th St., Milwau-  
kee, Wis.  
The Studebaker Corp., 635 S.  
Main St., South Bend, Ind.  
Thornton-Tamden Co., 8701  
79 Grinnell Ave., Detroit,  
Mich. (Special Drives) 206  
The Truckstell Co., 1672  
Union Commerce Bldg.,  
Cleveland, Ohio  
Ward LaFrance Truck Div.,  
Great American Indus-  
tries, Inc., Elmira, N. Y.  
The White Motor Co., 642 E.  
79th St., Cleveland, Ohio  
**MOTORS**  
(See Electric Motors)  
**MOVERS, Car**  
(See Car Movers)  
**NATURAL GAS ENGINES**  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
The Buda Co., 15401 Commer-  
cial, Harvey, Ill. 33  
Caterpillar Tractor Co., Peo-  
ria 8, Ill.  
Climax Eng. Co., 1812 S.  
4th St., Clinton, Iowa  
The Cooper-Bessemer Corp.,  
Sandusky St., Mt. Vernon,  
Ohio.  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.  
Hercules Motors Corp., 11th  
St., S.E., Canton, Ohio  
Ingersoll-Rand Co., 11 Broad-  
way, New York 4, N. Y. 42  
International Harvester Co.,  
180 N. Michigan Ave., Chi-  
cago 1, Ill.  
Minneapolis-Moline Power  
Implement Co., Box 1050,  
Minneapolis 1, Minn.  
Nordberg Mfg. Co., 3073 S.  
Chase Ave., Milwaukee 7,  
Wis. 34  
Novo Engine Co., 702 Porter  
St., Lansing, Mich.  
Waukesha Motor Co., P. O.  
Box 379, Waukesha, Wis.  
Worthington Pump & Ma-  
chinery Corp., 744 Broad  
St., Newark 2, N. J.  
**NOZZLES, Washing**  
Miles Blower Co., 1817 S.  
66th St., Milwaukee 14,  
Wis.  
Blinks Mfg. Co., 3114-40 Car-  
roll Ave., Chicago 12, Ill.  
Chain Belt Co., 1600 W.  
Bruce St., Milwaukee, Wis. 223  
Deister Machine Co., 1933 E.  
Wayne St., Ft. Wayne 4,  
Ind. 228  
Georgia Iron Wks., 605 12th  
St., Augusta, Ga.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Spraying Systems Co., 4021  
W. Lake St., Chicago 24,  
Ill.  
**OFFBEARERS, Power**  
(Concrete Block)  
Stearns Mfg. Co., Inc.,  
Adrian, Mich. 208  
Besser Mfg. Co., Alpena,  
Mich. 211  
**OIL BURNERS**  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee,  
Wis.  
The Babcock & Wilcox Co.,  
85 Liberty Street, New  
York 6, N. Y. 62  
W. N. Best Engr. Co., 91  
West St., New York 6,  
N. Y.  
Diamond Iron Wks., Inc. &  
The Mahr Mfg. Co. Div.,  
1800 N. 2nd St., Minne-  
apolis 11, Minn. 247

Enterprise Engine & Found-  
ry Co., 18th & Florida St.,  
San Francisco, Calif.  
Gar Wood Industries, Inc.,  
7924 Ropelle St., Detroit  
11, Mich.  
Macleod Co., 2232-40 Bogen  
St., Cincinnati, Ohio  
W. A. Riddell Corp., Bucy-  
rus, Ohio  
Simplicity System Co., River-  
side Drive, Chattanooga,  
Tenn.  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y. 129  
**OIL FILTERS**  
Dollinger Corp. (Formerly  
Staynew Filter Corp.), 11  
Centre Pk., Rochester 4,  
N. Y.  
Hilliard Corp., 400 W. Fourth  
St., Elmira, N. Y.  
W. G. B. Oil Clarifier, Inc.,  
Kingston, N. Y.  
Winslow Sales Co., 406 Mont-  
gomery, San Francisco,  
Calif.  
Wix Accessories Corp., Ozark  
St., Gastonia, N. C.  
**OIL, Lubricants**  
(See Lubricants)  
**PACKING MACHINERY**  
(See also Bagging Ma-  
chines)  
Bagpak, Inc., 220 E. 42nd  
St., New York 17, N. Y.  
St. Regis Paper Co.-Taggart  
Corp.-Valve Bag Co., 230  
Park Ave., New York 17,  
N. Y. 49  
F. L. Smith & Co., 60 E.  
42nd St., New York 17,  
N. Y. 129  
Syntron Co., 450 Lexington  
Ave., Homer City, Penn.  
**PALLETS, Steel, Wood for  
Concrete Products**  
Besser Mfg. Co., Alpena,  
Mich. 211  
Chase Fdry. & Mfg. Co.,  
Columbus 7, Ohio  
The Commercial Shearing &  
Stamping Co., 1775 Logan  
Ave., Youngstown 1, Ohio. 219  
Kent Machine Co., Cuyahoga  
Falls, Ohio 219  
Kirk & Blum Mfg. Co., 2307  
Spring Grove Ave., Cin-  
cinnati 25, Ohio  
Miles Mfg. Co., 545-7 Hupp  
Ave., Jackson, Mich.  
Multiplex Concrete Machin-  
ery Co., Elmore, Ohio. 211  
Stearns Mfg. Co., Inc.,  
Adrian, Mich. 208  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4330 Ta-  
cony St., Philadelphia 24,  
Penn.  
**PANEL BOARDS, Electric**  
(See Electrical Equipment  
& Supplies)  
**PANS, GRINDING,  
Wet and Dry**  
The Bonnot Co., Mulberry  
Rd., S.E., Canton, Ohio  
Eagle Iron Works, 129 Hol-  
comb, Des Moines, Iowa. 205  
Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.  
Lewistown Foundry & Ma-  
chine Co., 16 Elizabeth,  
Lewistown, Penn.  
McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45  
H. K. Porter Co., Inc., 1932  
Oliver Bldg., Pittsburgh,  
Penn. 2nd Cover  
W. A. Riddell Corp., Bucy-  
rus, Ohio.  
Traylor Eng. & Mfg. Co.,  
666 S. 10th St., Allentown,  
Penn. 7  
**PANS, APRON, CONVEYOR**  
(See Conveyors, Apron)

## PEBBLES

(See Grinding Pebbles)

## PERFORATED METAL

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
 Earle C. Bacon, Inc., 17 John St., New York, N. Y. 244  
 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Chicago Perforating Co., 2445 W. 24th Pl., Chicago, Ill. 218  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Cross Eng. Co., Carbondale, Penn. 238  
 The Harrington & King Perforating Co., 5650 Fillmore St., Chicago 44, Ill. 246  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y. 10, 11  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 Nortmann-Duffke Co., 2740 E. 32nd St., Milwaukee, Wis.  
 Standard Stamping & Perforating Co., 3139 W. 49th Pl., Chicago, Ill.  
 W. Toepfer & Sons, Inc., 1450 E. Park Place, Milwaukee 11, Wis.  
 Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

## PHOTO-ELECTRIC CELLS

General Electric Co., 1 River Rd., Schenectady, N. Y.  
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.  
 RCA Victor Div. of Radio Corp. of America, Front & Cooper Sts., Camden, N. J.  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

## PILLOW BLOCKS

(See Blocks, Pillow)

## PIPE, Asbestos

Johns-Manville, 22 E. 40th St., New York 18, N. Y.

## PIPE, Dredge (Standard)

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
 American Rolling Mill Co., Curtis Ave., Middletown, Ohio  
 American Steel Dredge Co., Inc., 2500 Taylor St., Fort Wayne, Indiana  
 Birdsboro Steel Fdry & Machine Co., 1941 Furnace St., Birdsboro, Penn.  
 Lancaster Iron Wks., Inc., 550 S. Prince St., Lancaster, Penn.  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Naylor Pipe Co., 1237 E. 92nd St., Chicago 19, Ill.  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
 Taylor Forge & Pipe Works, Box 485, Chicago, Ill.

## PIPE FITTINGS

(See also Dredge Pipe and Fittings)

American Rolling Mill Co., Curtis Ave., Middletown, Ohio  
 Band-It Co., 2536 Walnut St., Denver 5, Colo.  
 Dresser Mfg. Co., 41 Fisher Ave., Bradford, Penn.

The Flori Pipe Co., 629 East Red Bud, St. Louis, Mo.  
 Georgia Iron Works, 605 12th St., Augusta, Ga.  
 Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.  
 Taylor Forge & Pipe Wks., Box 485, Chicago, Ill.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 22nd Cover  
 R. D. Wood & Co., 400 Chestnut St., Philadelphia, Penn.

## PIPE MOLDS & MACHINES, Concrete

Concrete Equipment Co., Holland, Mich.  
 Concrete Pipe Mch. Co., 9th & Division St., Sioux City 19, Iowa  
 Flint & Walling Mfg. Co., Inc., Kendallville, Ind.  
 Lock Joint Pipe Co., 150 Rutledge Ave., East Orange, N. J.  
 Quinn Wire & Iron Works, Boone, Iowa  
 Universal Concrete Pipe Co., 297 S. High St., Columbus, Ohio

## PIPE THREAD COMPOUND

Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 33, Penn.  
 Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

## PLANERS, Shale

Eagle Iron Wks., 129 Holcomb, Des Moines, Iowa. 205  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.

## PLASTER MACHINERY

J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kan.  
 The Her-Born Eng. Mfg. Co., Box 666, Sandusky, Ohio  
 Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. 39

## PLASTER MIXERS

(See Mixers, Plaster)

## PLATE STEEL

(See Steel Plate)

## PNEUMATIC CONVEYORS

(See Air Conveyors)

## PNEUMATIC TOOLS

(See also Drills, Rock)

Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y. 40  
 The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio  
 Davey Compressor Co., 266 N. Water St., Kent, Ohio  
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
 Schramm Inc., Virginia Ave., West Chester, Penn.  
 Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## POLISHING MACHINES, Concrete

Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.  
 Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y.

## PONTOONS, Dredge and Pipe

American Rolling Mill Co., Curtis Ave., Middletown, Ohio  
 American Steel Dredge Co., Inc., 2511 W. Taylor St., Fort Wayne, Ind.

Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 Greenville Mfg. Wks., Greenville, Ohio  
 Maddox Foundry & Machine Works, Archer, Fla.  
 Manitowoc Eng. Works, Manitowoc, Wis. 35  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Millville Iron Wks., Inc., 6th St., & Florence Ave., Millville, N. J.  
 Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.  
 Pacific Car & Fdry. Co., 4th & Factory St., Renton, Washington  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.

## PORTABLE AGGREGATES

PLANTS, Crushing & Screening Plants  
 (See Crushing & Screening Plants, Portable)

## POWDER, Blasting

(See Explosives & Dynamite)

## POWER CONTROL UNITS

(Tractor)  
 Hyster Co., 2902 N.E. Clackamas St., Portland 4, Ore.  
 R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

## POWER STATION EQUIPMENT

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 The Babcock & Wilcox Co., 55 Liberty St., New York, N. Y. 62  
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio  
 The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio  
 Electric Machinery Mfg. Co., 1336 N.E. Tyler St., Minneapolis 13, Minn.  
 General Electric Co., 1 River Road, Schenectady, N. Y.  
 I-T-E Circuit Breaker Co., Nineteenth & Hamilton Sts., Philadelphia 30, Penn.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 Nordberg Mfg. Co., 3073 Chase Ave., Milwaukee, Wis. 34  
 Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. 92  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## PRECIPITATORS, Dust, Electrical (See Dust Collectors, Electrical)

## PREHEATERS, for Kilns, etc.

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Ellernan Co., 203 Continental Bank Bldg., Salt Lake City, Utah  
 Nordberg Process Mch. Co., Cleveland, Ohio  
 W. A. Riddell Corp., Bucyrus, Ohio  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129

## PROPORTIONING EQUIPMENT (See also Batching Equipment; Conveyors, Weighing)

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
 Blaw-Knox Co., Blawnox, Penn. 245

Builders - Providence, Inc. Div. of Builders Iron Fdry., 9 Coddling St., Providence 1, R. I.  
 Butler Bin Co., Box 407, Waukesha, Wis. 54  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.

Erie Steel Construction Co., 19th & Geist Rd., Erie, Penn. 204  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.

Hardinge Co., Inc., 240 Arch St., York, Penn. 225

Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio

Hills-McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

Kron Co., 1720 Fairfield Ave., Bridgeport 5, Conn.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.

Merrick Scale Mfg. Co., 180-185 Autumn St., Passaic, N. J. 241

Noble Co., 1850 7th St., Oakland 7, Calif. 229

Omega Machine Co., 9 Coddling St., Providence 1, R. I.

Sackrete, Inc., Apple & Vandallia Sts., Cincinnati 23, Ohio

Stearns Mfg. Co., Inc., Adrian, Mich. 208

Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Syntroon Co., 450 Lexington Ave., Homer City, Penn.

Toledo Scale Co., Telegraph Rd., Toledo 12, Ohio

## PROTECTIVE COATINGS

American Fluorac Co., Inc., 635 Rockdale, Cincinnati, Ohio

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah

The B. F. Goodrich Co., Akron, Ohio 5

Johns-Manville, 22 E. 40th St., New York 18, N. Y.

Lasting Products Co., 200 S. Franklinton Rd., Baltimore 23, Md.

Pure Oil Co., 35 E. Wacker Drive, Chicago, Ill.

Quigley Co., Inc., 56 W. 45th St., New York, N. Y.

Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill.

Turco Products Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit, Mich.

PULLERS, Car (See Car Movers)

## PULLEYS, Clutch

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Continental Gin Co., Industrial Div., 4500 5th Ave. So., Birmingham, Ala. 233

Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247

Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26



# DIRECTORY

Kent Machine Co., Cuyahoga Falls, Ohio ..... 232  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
The Medart Co., 100 Potomac St., St. Louis 18, Mo. .... 54  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash. .... 204  
W. A. Riddell Corp., Bucyrus, Ohio ..... 21  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
Webster Mfg., Inc., Tiffin, Ohio ..... 225  
T. B. Wood's Sons Co., 1325 Fifth Ave., Chambersburg, Penn. .... 21

**PULLEYS, Conveyor and Elevator**  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif. .... 51  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
Continental Gin Co., Industrial Div., 4500 5th Ave. S., Birmingham, Ala. .... 233  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif. .... 241  
George Hales Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y. .... 229  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 51  
W. A. Jones Fdy. & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. .... 26  
Kent Machine Co., Cuyahoga Falls, Ohio ..... 6  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45  
The Medart Co., 100 Potomac St., St. Louis 18, Mo. .... 21  
W. A. Riddell Corp., Bucyrus, Ohio ..... 6  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J. .... 8  
Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind. .... 5  
Sprout, Waldron & Co., Muncy, Penn. .... 40th Y.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
The Webb Corp., 402 E. Broadway, Webb City, Mo. .... 45th  
Webster Mfg., Inc., Tiffin, Ohio ..... 135 S. Angeles  
T. B. Woods Sons Co., 1325 Fifth Ave., Chambersburg, Penn. .... 720 Mich.

**PULLEYS, Magnetic (See also Magnetic Separators)**  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
Dings Magnetic Separator Co., 509 E. Smith St., Milwaukee 7, Wis. .... 51  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 6  
Stearns Magnetic Mfg. Co., 675 S. 28th St., Milwaukee 4, Wis. .... 233  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 247  
**PULP DENSITY CONTROLLERS**  
The Bristol Co., Waterbury 31, Conn. .... 100 S.  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. .... 935-99  
Hardinge Co., Inc., 240 Arch St., York, Penn. .... 51  
The Mine & Smelter Supply Co., Box 5270, Terminal Annex, Denver 17, Colo. .... 26

**PULVERIZER FUEL SYSTEMS (See also Coal Pulverizing Equipment)**  
Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. .... 62  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 225  
Hardinge Co., Inc., 240 Arch St., York, Penn. .... 18, 19  
Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago, Ill. .... 128, 129  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 29  
Strong-Scott Mfg. Co., Taft & Kennedy St., Minneapolis 13, Minn. .... 29  
Whiting Corp., 157th & Lathrop Ave., Harvey, Ill. .... 201  
Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo. .... 29

**PULVERIZER PARTS**  
Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. .... 201  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 37  
American Pulverizer Co., 1249 MacKlind Ave., St. Louis 10, Mo. .... 62  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 243  
Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn. .... 195  
Dixie Machinery Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo. .... 25  
Eagle Crusher Co., Inc., Galion, Ohio ..... 243  
The Frog Switch & Mfg. Co., Carlisle, Penn. .... 245  
Gilson Bros. Co., Fredonia, Wis. .... 177  
Gründler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 51  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 14, 15  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y. .... 10, 11  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill. .... 16  
Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Pa. .... 29  
Petibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill. .... 128, 129  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 29  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 243  
Williams Patent Crusher & Pulverizer Co., 2701 North Broadway, St. Louis 6, Mo. .... 25

**PULVERIZERS (See also Crushers, Mills)**  
Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. .... 37  
American Pulverizer Co., 1249 MacKlind Ave., St. Louis 10, Mo. .... 62  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 243  
The Bonnot Co., Mulberry Rd., S. E. Canton, Ohio ..... 243  
Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn. .... 242  
Brooks Equipment & Mfg. Co., 408 Davenport Road, Knoxville, Tenn. .... 195  
Dixie Mch. Mfg. Co., 4200 Goodfellow, St. Louis 20, Mo. .... 25  
Eagle Crusher Co., Inc., Galion, Ohio ..... 25

Gilson Bros. Co., Fredonia, Wis. .... 245  
Gründler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177  
Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225  
International Pulverizing Corp., New Albany Rd., Moorestown, N. J. .... 51  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio ..... 10, 11  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y. .... 10, 11  
Kent Mill Co., 10 Rapelye St., Brooklyn 31, New York, N. Y. .... 39  
Nordberg Process Mch. Co., Cleveland, Ohio ..... 230  
Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. .... 8  
Prater Pulverizer Co., 1825 S. 55th Ave., Chicago 50, Ill. .... 29  
Raymond Pulverizer Div., Combustion Engineering Co., Inc., 1319 N. Branch St., Chicago, Ill. .... 128, 129  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 239  
The Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo. .... 8  
Stedman's Fdry. & Machine Works, Aurora, Indiana ..... 39  
Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. .... 29  
Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa ..... 8  
Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. .... 23  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 29  
Whiting Corp., Harvey, Ill. .... 23  
Williams Patent Crusher & Pulv. Co., 2701 N. Broadway, St. Louis 6, Mo. .... 29

**PUMPS, Air Lift for Cement, Slurry, Water**  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. .... 193  
Fuller Co., Fuller Bldg., Catasauqua, Penn. .... 14, 15  
Hills-McCanna Co., 3025 N. Western Ave., Chicago 19, Ill. .... 42  
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill. .... 23  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 23  
Pennsylvania Pump & Compressor Co., Easton, Penn. .... 23  
Quimby Pump Co., Div. of H. K. Porter Co., Inc., 49th & Harrison Streets, Pittsburgh, Penn. .... 2nd Cover  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. .... 128, 129  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind. .... 23

**PUMPS, Asphalt**  
I. D. Cummer & Son Co., 17th & Euclid Ave., Cleveland 15, Ohio ..... 62  
Hetherington & Berner, Inc., 701 Kentucky Ave., Indianapolis 7, Ind. .... 5631  
Madsen Iron Wks., 5631 Bickett St., Huntington Park Calif. .... 243  
Simplicity System Co., Riverside Drive, Chattanooga 6, Tenn. .... 242  
Warren Brothers Roads Co., 38 Memorial Drive, Cambridge 42, Mass. .... 195

**PUMPS, Cement (See Cement Pumps)**

**PUMPS, Centrifugal**  
Allen Cone & Mch. Corp., 120 Broadway, New York 5, N. Y. .... 221  
Allen-Sherman-Hoff Co., 221 N. 15th St., Philadelphia, Penn. .... 201  
Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis. .... 100  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
American Well Works, 100 North Broadway, Aurora, Ill. .... 100  
Bryon-Jackson Co., P.O. Box 2017, Terminal Annex, Los Angeles 54, Calif. .... 985, Buffalo 5, N. Y.  
Buffalo Forge Co., P.O. Box 985, Buffalo 5, N. Y. .... 12, Wis.  
C. H. & E. Mfg. Co., 3849 N. Palmer St., Milwaukee 12, Wis. .... 223  
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio ..... 31  
Construction Machinery Co., Glenwood & Vinton, Waterloo, Iowa ..... 31  
Dayton-Dowd Co., Third & Fort, Quincy, Ill. .... 38  
DeLaval Steam Turbine Co., Trenton, N. J. .... 31  
The Deming Co., 150 Broadway, Salem, Ohio ..... 31  
Denver Equipment Co., 1400 17th St., Denver, Colo. .... 31  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 8, Ill. .... 31  
Gardner - Denver Co., Gardner & First Ave., Quincy, Ill. .... 38  
Goulds Pumps, Inc., 300 Fall St., Seneca Falls, N. Y. .... 23  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif. .... 42  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. .... 23  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio ..... 23  
Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.) ..... 23  
Kansas City Hay Press Co., 801 Woodweather, Kansas City, Mo. .... 2001-21 8th Ave., Beaver Falls, Penn.  
Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn. .... 23  
Kimball-Krogh Pump Co., Div., Food Mch. Corp., W. 26th Ave. & 3rd St., Los Angeles, Calif. .... 1547  
La Bour Co., Inc., 1547 Sterling Ave., Elkhart, Ind. .... Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.  
Maddox Fdry. & Machine Works, Inc., Archer, Fla. .... 31  
Morris Machine Works, 31 E. Genesee St., Baldwinsville, N. Y. .... 2900 Broadway, Denver 1, Colo.  
Novo Engine Co., 702 Porter St., Lansing, Mich. .... 33 W. 42nd St., New York 18, N. Y.  
Peerless Pump Div., Food Mch. Corp., 301 W. Ave. at Humboldt, Los Angeles, Calif. .... 1932  
Pennsylvania Pump & Compressor Co., Easton, Penn. .... 2nd Cover  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover  
R. H. Sheppard Co., Philadelphia 31, Hanover, Penn. .... 2nd Cover

# DIRECTORY

Sterling Machinery Corp., 411 Southwest Blvd., Kansas City, Mo.  
Webb Corp., 402 E. Broadway, Webb City, Mo.  
A. B. Wilfley & Sons, Inc., P. O. Box 2330, Denver, Colo. 179  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## PUMPS, Concrete

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

## PUMPS, Deep Well

American-Marsh Pumps, Inc., 205 Capital Ave., Battle Creek, Mich.  
American Well Works, 100 North Broadway, Aurora, Ill.  
Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54, Calif.  
DeLaval Steam Turbine Co., Trenton, N. J.  
The Deming Co., 150 Broadway, Salem, Ohio  
Erie Pump & Engine Works, 140 Glenwood Ave., Medina, N. Y.  
Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 6, Ill.  
Fairbanks, Morse & Co., Pomona Works, 206 E. Commercial St., Pomona, Calif.  
Goulds Pumps, Inc., 300 Fall St., Seneca Falls, N. Y.  
The Hell Co., 3000 W. Montana St., Milwaukee 1, Wis.  
Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47  
Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn.  
Layne & Bowler, Inc., Box 215, Hollywood Sta., Memphis 8, Tenn.  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Peerless Pump Div., Food Mch. Corp., 301 W. Ave. at Humboldt, Los Angeles, Calif.  
Quimby Pump Co., Div. of H. K. Porter Co., Inc., 49th & Harrison Sts., Pittsburgh, Penn. 2nd Cover  
Webb City & Carterville Fdry. & Mach. Wks., Webb City, Mo.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## PUMPS, Diaphragm

Ralph B. Carter Co., Markley-Carter Dust Collector Div., 196 Atlanta St., Hackensack, N. J.  
C. H. & E. Mfg. Co., 3849 N. Palmer St., Milwaukee 12, Wis.  
Colorado Iron Works Co., 1624 17th St., Denver, Colo.  
Construction Machinery Co., Glenwood & Vinton, Waterloo, Iowa  
The Deming Co., 150 Broadway, Salem, Ohio  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
The Gallagher Co., 42 S. 2nd East St., Salt Lake City 1, Utah  
Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y. (Subsidiary of Complete Machinery & Equipment Co.)

Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
Novo Engine Co., 702 Porter St., Lansing, Mich.  
Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
Quimby Pump Co., Div. of H. K. Porter Co., Inc., 49th & Harrison Sts., Pittsburgh, Penn. 2nd Cover  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Western Machinery Co., 760 Folsom St., San Francisco, Calif.

## PUMPS, Dredging (See Dredge Pumps)

## PUMPS, Pulverized Material (See Cement Pumps)

## PUMPS, Rubber-Lined

Allen-Sherman-Hoff Co., 221 N. 15th, Philadelphia, Penn.  
Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.  
Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54, Calif.  
The Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.  
Manhattan Rubber Mfg. Co., Div. of Raybestos-Manhattan, Inc., 61 Willet St., Passaic, N. J. 13  
Morris Machine Works, 31 E. Genesee St., Baldwinsville, N. Y.

Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
A. R. Wilfley & Sons, Inc., P. O. Box 2330, Denver 1, Colo. 179

## PUMPS, Sand

American Managanese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
A. R. Wilfley & Sons, Inc., P. O. Box 2330, Denver 1, Colo. 179

## PUMPS, Slurry

(See Slurry Pumps)

## PUMPS, Vacuum

Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.  
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. 40  
Construction Mch. Co., Glenwood & Vinton, Waterloo, Iowa  
J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
Fuller Co., Fuller Bldg., Catasauqua, Penn. 14, 15  
Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. 38  
Groch Engr. Co., 628 W. 9th St., Los Angeles 15, Calif.  
Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23

Kennedy-Van Saun Mfg. & Eng. Co., Park Ave. Bldg., New York, N. Y. 10, 11  
Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
Palo Myers, Inc., 81 Reade St., New York 17, N. Y.  
Pennsylvania Pump & Compressor Co., Easton, Penn.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
W. A. Riddell Corp., Bucyrus, Ohio  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## PYROMETERS

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Cambridge Instrument Co., Inc., 3732 Grand Central Terminal, New York 17, N. Y.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.  
The Foxboro Instrument Co., Neponset St., Foxboro, Mass.  
General Electric Co., 1 River Rd., Schenectady, N. Y.  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
Simplicity System Co., Riverside Dr., Chattanooga 6, Tenn.  
Tammis Silica Co., 228 N. La Salle St., Chicago 1, Ill.  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## RACKS, Curing (Concrete Masonry)

Besser Mfg. Co., Alpena, Mich. 211  
The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
Erickson Special Equipment Co., 2831 Ulysses N. E., Minneapolis, Minn.  
Johnston Iron Works, 1133 Cornelia Ave., Chicago 13, Ill.  
Kent Machine Co., Cuyahoga Falls, Ohio 219  
Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
The Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
Stearns Mfg. Co., Inc., Adrian, Mich. 208

## RAILS, Relay

Central Frog & Switch Co., Station O, Box 9, Cincinnati, Ohio  
L. B. Foster Co., P. O. Box 1647, Pittsburgh 30, Penn.  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.

## RAILWAY, Industrial Equipment

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
The Central Frog & Switch Co., Station O, Box 9, Cincinnati, Ohio  
The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
Differential Steel Car Co., N. Main St., Findlay, Ohio  
L. B. Foster Co., P. O. Box 1647, Pittsburgh 30, Penn.  
Frog, Switch & Mfg. Co., Carlisle, Penn. 243

Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
Pressed Steel Car Co., Inc., Industrial Div., 2500 Koppers Bldg., Pittsburgh, Penn. 202  
The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.

## RAILWAYS, Electric

The Atlas Car & Mfg. Co., 1140 Ivanhoe Rd., Cleveland, Ohio  
Differential Steel Car Co., N. Main St., Findlay, Ohio  
READY MIXED TRUCKS (See Concrete Mixers, Truck)

## RECORDERS, Concrete Batching

C. S. Johnson Co., P. O. Box 71, Champaign, Ill.  
Scientific Concrete Service Corp., 1252 Waverly Place, Elizabeth 3, N. J. 244  
The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.

## RECORDERS, Draft, Pressure, Temperature

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
The Hays Corp., Michigan City, Ind.  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
Taylor Instrument Co., 95 Ames St., Rochester, N. Y.  
Wheelco Instrument Co., 847 W. Harrison St., Chicago 7, Ill.

## RECTIFIERS (Electric) (See Electrical Equipment and Supplies)

## RECUPERATORS, Waste Heat

Manitowoc Engineering Wks., Manitowoc, Wis. 31  
Nordberg Process Mch. Co., Cleveland, Ohio  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7

## REFRACTORIES (See also Blocks, Brick, Fire Brick, Insulation)

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Basic Refractories, Inc., Hanna Bldg., Cleveland, Ohio  
Chicago Fire Brick Co., 1467 N. Elston Ave., Chicago, Ill.  
Denver Fire Clay Co., Blake & Bosworth Sts., Denver, Colo.  
General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.  
A. P. Green Fire Brick Co., Mexico, Mo.  
Harbinson-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.  
Johns-Manville, 22 E. 40th St., New York 16, N. Y.  
Laclede-Christy Clay Products Co., Ambassador Bldg., St. Louis 1, Mo.  
E. J. Lavino & Co., 1528 Walnut St., Philadelphia, 2, Penn.  
Mexico Refractories Co., Cole & Love St., Mexico, Mo.  
Permanente Cement Co., Latham Square Bldg., Oakland 12, Calif.  
Quigley Co., Inc., 527 Oak Ave., New York 17, N. Y.  
Refractory & Insulation Corp., 120 Wall St., New York 5, N. Y.

# DIRECTORY

Walsh Refractories Corp.,  
4070 N. First St., St. Louis  
7, Mo.

## REGULATORS, Feed Water

Ballie Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.

## REGULATORS, Pressure

Ballie Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
The Foxboro Instrument Co., Neponset Ave., Foxboro, Mass.  
The Hays Corp., Michigan City, Ind.  
Kellogg Div. — American Brake Shoe Co., 97 Humboldt Street, Rochester 9, N. Y.  
Manning, Maxwell & Moore Inc., 11 Elias St., Bridgeport 2, Conn.  
The Alexander Milburn Co., 1425 W. Baltimore St., Baltimore 23, Md.  
Taylor Instrument Companies, 95 Ames St., Rochester, N. Y.  
Wheelco Instrument Co., 847 Harrison St., Chicago 7, Ill.

## REGULATORS, Speed

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Ballie Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## REGULATORS, Temperature

Ballie Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio  
Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.  
The Foxboro Instrument Co., Neponset Ave., Foxboro, Mass.  
The Hays Corp., Michigan City, Ind.  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
Manning, Maxwell & Moore Inc., 11 Elias St., Bridgeport 2, Conn.  
Taylor Instrument Companies, 95 Ames St., Rochester, N. Y.  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## REGULATORS, Voltage

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
General Electric Co., 1 River Rd., Schenectady, N. Y.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## RESPIRATORS

Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
Davis Emergency Equip. Co., Inc., 45 Halleck St., Newark 4, N. J.  
Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.  
Pulmosan Safety Equipment Corp., 176 Johnston St., Brooklyn 1, N. Y.  
Willson Products, Inc., 2nd & Washington Sts., Reading, Penn.

## REVOLUTION COUNTERS (See Tachometers)

## REWASHERS, Screw; for Sand, Gravel, etc.

Allen Cone & Mch. Corp., 120 Broadway, New York 5, N. Y.  
Colorado Iron Wks. Co., 1624 17th St., Denver 2, Colo.  
Eagle Iron Works, 129 Holcomb, Des Moines, Iowa.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
Pioneer Engr. Wks., 1515 Central Ave., Minneapolis 13, Minn.  
Smith Engr. Wks., 532 E. Capitol Drive, Milwaukee 12, Wis.  
Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
Straub Mfg. Co., 507 Chestnut, Oakland, Calif.  
Webster Mfg., Inc., Tiffin, Ohio

## RHEOSTATS

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio  
General Electric Co., 1 River Rd., Schenectady, N. Y.  
Goodman Mfg. Co., 4943 S. Halsted, Chicago, Ill.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Penn.

## ROCK WOOL CUPOLAS & EQUIPMENT (See also Cupolas, Rock Wool)

Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Whiting Corp., 157th St. & Lathrop Ave., Harvey, Ill.

## RODS, for Grinding Mills

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
Groch Engr. Co., 625 W. 9th St., Los Angeles 15, Calif.  
Hardinge Co., Inc., 240 Arch St., York, Penn.  
The Mine & Smelter Supply Co., Box 5270, Terminal Annex, Denver 17, Colo.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.

## RODS, Welding, Hard-facing (See Welding Rods, Hard Surfacing Metals)

## RODS, Welding (See Welding Rods and Electrodes)

## ROLLER BEARINGS (See also Bearings)

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.  
Hyatt Bearings Div., General Motors Corp., Harrison, N. J.  
Rollway Bearing Co., 541 Seymour St., Syracuse, N. Y.  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
S. K. F. Industries, Inc., Front St. & Erie Ave., Philadelphia 34, Penn.  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## ROLLS, Crushing (See Crushers)

## ROOFING AND SIDING Industrial

Bethlehem Steel Co., Bethlehem, Penn.  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
Johns-Manville, 22 E. 40th St., New York 18, N. Y.  
The R. C. Mahon Co., 231 S. La Salle St., Chicago 4, Ill.  
Republic Steel Co., Republic Bldg., Cleveland, Ohio  
The Ruberoid Co., 500 Fifth Ave., New York, N. Y.  
Tennessee Coal, Iron & Railroad Co., Brown - Marx Bldg., Birmingham 2, Ala.  
Truscon Steel Co., Albert St., Youngstown, Ohio

## ROOFING TILE MACHINES Concrete

W. E. Dunn Mfg. Co., 23 W. 24th St., Holland, Mich.

## ROPE, Manila, Sisal, Jute, etc.

The Edwin H. Fidler Co., 5625 Tacony St., Philadelphia 24, Penn.  
Wall Rope Works, Inc., 48 South Street, New York 5, N. Y.

## ROPE, Wire (See Wire Rope)

## RUBBER LININGS (See also Chute Linings, Rubber)

American Rubber Mfg. Co., 145 Park Ave., Oakland 8, Calif.  
Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass.  
The Cincinnati Rubber Mfg. Co., Franklin Ave., Norwood Station, Cincinnati, Ohio  
Continental Rubber Works, 1902 Liberty St., Erie, Penn.  
The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.  
Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn.  
The B. F. Goodrich Co., Akron, Ohio  
Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.  
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., 51 Willett St., Passaic, N. J.  
Manson Glover, 213 Pleasant, Stoughton, Mass.  
Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown 1, Ohio.  
U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.

## SAFETY EQUIPMENT, Goggles, Shoes, Etc.

Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
Davis Emergency Equip. Co., Inc., 45 Halleck St., Newark 4, N. J.  
Goodall Rubber Co., 5 S. 36th St., Philadelphia 4, Penn.  
B. F. Goodrich Co., 448 S. Main St., Akron, Ohio  
Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.  
Pulmosan Safety Equipment Corp., 176 Johnston St., Brooklyn 1, N. Y.  
U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.  
Willson Products, Inc., 2nd & Washington Sts., Reading, Penn.

## SAMPLING EQUIPMENT

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
The Buda Co., 15401 Commercial Ave., Harvey, Ill.  
Colorado Iron Wks. Co., 1624 17th St., Denver 2, Colo.  
Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.  
Fuller Co., Fuller Bldg., Catasauqua, Penn.  
The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Tower, Denver 17, Colo.  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.

## SAND DRAGS

Allen Cone & Mch. Corp., 120 Broadway, New York 5, N. Y.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Coyle & Roth Co., Inc., 3024 S. E. 4th St., Minneapolis 14, Minn.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Greenville Mfg. Works, Greenville, Ohio  
Iowa Mfg. Co., 916 16th St., N. E., Cedar Rapids, Iowa  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Fred T. Kern Co., P. O. Box 2057, Milwaukee 1, Wis.  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.  
Maddox Foundry & Machine Works, Archer, Fla.  
Meckum Engr. Wks., 53 W. Jackson Blvd., Chicago 4, Ill.  
Pioneer Eng. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo.  
Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis.  
Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa



**SAND & GRAVEL PLANTS,  
Engineers & Contractors**

Allen Cone & Mch. Corp.,  
120 Broadway, New York  
5, N. Y.  
Anderson Engr. Co., 19-21  
Charles St., Cambridge 41,  
Mass.  
Austin-Western Co., 601  
Farnsworth Ave., Aurora,  
Ill. 53  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Barber-Greene Co., 631 W.  
Park Ave., Aurora, Ill. 175  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
24, Calif.  
Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
J. D. Christian Engineers,  
480 Potrero Ave., San Fran-  
cisco, Calif.  
Coyle & Roth Co., Inc., 3024  
S. E. 4th St., Minneapolis  
14, Minn.  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los Ange-  
les 11, Calif.  
Diamond Iron Works, Inc.,  
and The Mahr Mfg. Co.  
Div., 1800 N. 2nd St., Min-  
neapolis 11, Minn. 247  
The Dorr Co., 570 Lexington  
Ave., New York 22, N. Y. 193  
Dravo Corp., Neville Island,  
Pittsburgh 25, Penn.  
The Gailgher Co., 48 S. 2nd  
East St., Salt Lake City 1,  
Utah  
Greenville Mfg. Works,  
Greenville, Ohio  
Gruendler Crusher & Pulver-  
izer Co., 2915-17 N. Market  
St., St. Louis, Mo. 177  
Iowa Mfg. Co., 916 16th St.  
N. E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 81  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York, N. Y. 10, 11  
Fred T. Kern Co., P. O. Box  
2057, Milwaukee 1, Wis.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Lippmann Eng. Works, 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45  
Maddox Foundry & Machine  
Works, Archer, Fla.  
Morrow Mfg. Co., 722 E. 10th  
St., Wellston, Ohio  
New Holland Machine Co.,  
100 Franklin St., New Hol-  
land, Penn. 228  
Pioneer Engr. Wks., Inc.,  
1515 Central Ave., Minne-  
apolis 13, Minn. 227  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo. 200  
Smith Engr. Wks., 532 E.  
Capitol Dr., Milwaukee 12,  
Wis. 56  
Stearns-Roger Mfg. Co., 1718-  
22 California St., Denver 2,  
Colo.  
Traylor Eng. & Mfg. Co.,  
Allentown, Penn. 7  
W. Toepfer & Sons, Inc.,  
1450 E. Park Pl., Milwau-  
kee 11, Wis.  
Universal Eng. Corp., 625 C  
Ave. W., Cedar Rapids,  
Iowa  
Universal Road Machinery  
Co., 27 Emerick St., Kings-  
ton, N. Y. 230  
Wisconsin Foundry & Ma-  
chine Co., 623 E. Main,  
Madison 1, Wis.

**SAND-LIME BRICK  
MACHINERY**

Besser Mfg. Co., Alpena,  
Mich. 211  
Hardinge Co., Inc., 240 Arch  
St., York, Penn. 225

International Engr., Inc., Bo-  
lander Ave., Dayton 1, Ohio  
Jackson & Church Co., 321  
N. Hamilton St., Saginaw,  
Mich. 215  
The Mine & Smelter Supply  
Co., P. O. Box 5270, Termi-  
nal Annex, Denver 17, Colo.  
The Multiplex Concrete Mch.  
Co., Elmore, Ohio. 217  
W. A. Riddell Corp., Bucy-  
rus, Ohio

**SAND RECOVERY MACHIN-  
ERY, Cones, Classifiers,  
Dewaterers, etc.**

Allen Cone & Mch. Co., 120  
Broadway, New York 5,  
N. Y.  
Allis-Chalmers Mfg. Co., 1945  
Prodrac St., Milwaukee 1,  
Wis.  
Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis. 223  
Colorado Iron Wks., 1624 17th  
St., Denver 2, Colo.  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los Ange-  
les 11, Calif.  
Coyle & Roth Co., Inc., 3024  
S. E. 4th St., Minneapolis,  
Minn.  
The Delster Concentrator Co.,  
915 Glasgow Ave., Fort  
Wayne, Ind. 228  
Deister Machine Co., 1933 E.  
Wayne St., Ft. Wayne 4,  
Ind. 228  
The Dorr Co., 570 Lexington  
Ave., New York 22, N. Y. 193  
Eagle Iron Works, 129 Hol-  
comb, Des Moines, Iowa. 205  
Hardinge Co., Inc., 240 Arch  
St., York, Penn. 225  
Iowa Mfg. Co., 916 16th St.  
N. E., Cedar Rapids, Iowa. 166  
Fred T. Kern Co., P. O. Box  
2057, Milwaukee 1, Wis.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45  
Mine & Smelter Supply Co.,  
1422 17th St., Denver, Colo.  
Morrow Mfg. Co., 722 E. 10th  
St., Wellston, Ohio  
Productive Equipment Corp.,  
2926 W. Lake St., Chicago  
12, Ill.  
Ritter Products Corp., Ritter  
Park, Rochester 3, N. Y.  
Smith Engr. Wks., 532 E.  
Capitol Dr., Milwaukee 12,  
Wis. 56  
Stephens-Adams Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6  
Universal Road Machinery  
Co., 27 Emerick St., Kings-  
ton, N. Y. 239  
Western Machinery Co., 760  
Folsom St., San Francisco,  
Calif.

**SANDERS (Cast Stone)**

Independent Pneumatic Tool  
Co., 600 W. Jackson Blvd.,  
Chicago 6, Ill.

**SCALES, Batching**

Blaw - Knox Co., Blawnox,  
Penn. 245  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
24, Calif.  
Bonded Scale Co., 128 Bel-  
view, Columbus 7, Ohio  
Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.  
Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
The Conveyor Co., Inc., 3260  
Slauson Ave., Los Angeles  
11, Calif.  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.  
Garlinghouse Bros., 2416 E.  
16th St., Los Angeles 21,  
Calif.

Howe Scale Co., Rutland, Vt.  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Kron Co., 1720 Fairfield Ave.,  
Bridgeport 5, Conn.  
Merrick Scale Mfg. Co., 180-  
186 Autumn St., Passaic,  
N. J. 241  
Noble Co., 1860 7th St., Oak-  
land 7, Calif. 229  
Richardson Scale Co., Clif-  
ton, N. J.  
Scientific Concrete Service  
Corp., 1252 Waverly Place,  
Elizabeth 3, N. J. 244  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

**SCALES, Conveyor  
(See Conveyors, Weigh-  
ing)**

**SCALES, Hopper**

The Atlas Car & Mfg. Co.,  
1100 Ivanhoe Rd., Clevel-  
and 10, Ohio  
Blaw - Knox Co., Blawnox,  
Penn. 245  
Bodinson Mfg. Co., 2401 Bay-  
shore Blvd., San Francisco  
24, Calif.  
Bonded Scale Co., 128 Bel-  
view, Columbus 7, Ohio  
Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.  
Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
Erie Steel Const. Co., 19th  
& Geist Rd., Erie, Penn. 204  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.  
Howe Scale Co., Rutland, Vt.  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Kron Co., 1720 Fairfield Ave.,  
Bridgeport 5, Conn.  
Lippmann Eng. Wks., 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
Noble Co., 1860 7th St., Oak-  
land 7, Calif. 229  
Richardson Scale Co., Clif-  
ton, N. J.  
Scientific Concrete Service  
Corp., 1252 Waverly Pl.,  
Elizabeth 3, N. J. 244  
Stephens-Adams Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio  
Winslow Government Stand-  
ard Scale Works, 25th &  
Hawthorne, Terre Haute,  
Ind.  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

**SCALES, Laboratory**

Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.  
Burrell Technical Supply Co.,  
1936-1942 Fifth Ave., Pitts-  
burgh, Penn.  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
6, Ill.  
Fisher Scientific Co., 717  
Forbes St., Pittsburgh 19,  
Penn.  
Howe Scale Co., Rutland, Vt.  
Kron Co., 1720 Fairfield Ave.,  
Bridgeport 5, Conn.  
Palo Myers, Inc., 81 Reade  
St., New York 17, N. Y.  
Scientific Concrete Service  
Corp., 1252 Waverly Pl.,  
Elizabeth 3, N. J. 244  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio

**SCALES, Larry (See also  
Weigh Laries)**

Atlas Car & Mfg. Co., 1100  
Ivanhoe Rd., Cleveland 10,  
Ohio  
Bonded Scale Co., 128 Bel-  
view, Columbus 7, Ohio  
Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.

Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis. 223  
Howe Scale Co., Rutland, Vt.  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Richardson Scale Co., Clif-  
ton, N. J.  
S. Adams Mfg. Co., Inc.,  
Adrian, Mich. 208  
Stephens-Adams Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

**SCALES, Proportioning**

Bonded Scale Co., 128 Bel-  
view, Columbus 7, Ohio  
Builders - Providence, Inc.,  
Div. of Builders Iron Foun-  
dry, 9 Coddling St., Provi-  
dence 1, R. I.  
Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.  
Butler Bin Co., Box 407,  
Waukesha, Wis. 54  
Erie Steel Const. Co., 19th  
& Geist Rd., Erie, Penn. 204  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.  
Howe Scale Co., Rutland, Vt.  
C. S. Johnson Co., P. O. Box  
71, Champaign, Ill. 234  
Merrick Scale Mfg. Co., 180-  
186 Autumn St., Passaic,  
N. J. 241  
Richardson Scale Co., Clif-  
ton, N. J.  
Schaffer Poidometer Co., 2828  
Smallman St., Pittsburgh,  
Penn.  
Scientific Concrete Service  
Corp., 1252 Waverly Place,  
Elizabeth 3, N. J. 244  
Toledo Scale Co., Telegraph  
Rd., Toledo 12, Ohio  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

**SCALES, Truck, Railway**

Bonded Scale Co., 128 Bel-  
view, Columbus 7, Ohio  
Buffalo Scale Co., Inc., 1200  
Niagara St., Buffalo, N. Y.  
Fairbanks, Morse & Co., 600  
S. Michigan Ave., Chicago  
5, Ill.  
Howe Scale Co., Rutland, Vt.  
Kron Co., 1720 Fairfield Ave.,  
Bridgeport 5, Conn.  
Merrick Scale Mfg. Co., 180-  
186 Autumn St., Passaic,  
N. J. 241  
Webb Corp., 402 E. Broad-  
way, Webb City, Mo.  
Winslow Government Stand-  
ard Scale Works, 25th &  
Hawthorne, Terre Haute,  
Ind.  
The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

**SCRAPERS, Power Drag  
(See also Cable Excava-  
tors)**

J. D. Adams, Oliver & Bel-  
mont Aves., Indianapolis,  
Ind.  
Blaw - Knox Co., Blawnox,  
Penn. 245  
Kent Machine Co., Cuyahoga  
Falls, Ohio 219  
Novo Engine Co., 702 Porter  
St., Lansing, Mich.  
Rogers Iron Wks. Co., 11th  
& Pearl, Joplin, Mo. 200  
Sauerman Bros., Inc., 530 S.  
Clinton St., Chicago 7, Ill. 230  
Street Brothers Machine Co.,  
415 Ochs Bldg., Chattanooga  
2, Tenn.  
Sullivan Mch. Co., Wood-  
land Ave., Michigan City,  
Ind.

# DIRECTORY

## SCRAPERS, Tractor

Allis-Chalmers Tractor Div.,  
1125 S. 70th St., Milwaukee, Wis. 24  
The Baker Mfg. Co., 10th &  
Stanford Ave., Springfield,  
Ill.  
Bucyrus-Erie Co., P. O. Box  
56, South Milwaukee, Wis.  
The Cleveland Tractor Co.,  
19300 Euclid Ave., Cleveland  
17, Ohio  
Gar Wood Industries, Inc.,  
7924 Riopelle St., Detroit  
11, Mich.  
The Heil Co., 3000 W. Mont-  
ana St., Milwaukee 1, Wis.  
Hi-Way Service Corp., 3857  
W. Wisconsin Ave., Mil-  
waukee 8, Wis.  
LaPlant-Choate Mfg. Co.,  
Inc., Cedar Rapids, Iowa  
R. G. LeTourneau, Inc., 220  
Grant St., Peoria, Ill.  
Sauerman Bros., Inc., 530 S.  
Clinton St., Chicago, Ill. 230

## SCREEN CLOTH, Woven- Wire (See also Wire Cloth)

Audubon Wire Cloth Corp.,  
(Subsidiary of Manganese  
Steel Forge Co.), Rich-  
mond St. & Castor Ave.,  
Philadelphia, Penn.  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Buffalo Wire Works Co., 487  
Terrace, Buffalo, N. Y.  
The California Wire Cloth  
Corp., 1001 122nd Ave.,  
Oakland, Calif.  
Cleveland Wire Cloth & Mfg.  
Co., 3573 E. 78th St.,  
Cleveland 5, Ohio 240  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.  
Cyclone Fence Div., Ameri-  
can Steel & Wire Co.,  
Waukegan, Ill.  
Harris Steel Products Co., 420  
Lexington Ave., New York  
17, N. Y.  
Iowa Mfg. Co., 916 16th St.  
N.E., Cedar Rapids, Iowa. 166  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51  
Ludlow-Saylor Wire Co., 634  
S. Newstead Ave., St.  
Louis, Mo. 52  
Michigan Wire Cloth Co.,  
2108 Howard St., Detroit,  
Mich.  
Newark Wire Cloth Co., 351  
Verona Ave., Newark 4,  
N. J.  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
John A. Roebbing's Sons Co.,  
640 S. Broad, Trenton 2,  
N. J.  
Simplicity Engr. Co., 213 S.  
Oak St., Durand, Mich. 32  
Taylor-Wharton Iron & Steel  
Co., High Bridge, N. J. 16  
The W. S. Tyler Co., 3615  
Superior St., Cleveland 14,  
Ohio 231

## SCREEN PARTS

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.  
Chicago Perforating Co., 2445  
W. 24th Pl., Chicago, Ill. 218

Cleveland Wire Cloth & Mfg.  
Co., 3573 E. 78th St.,  
Cleveland, Ohio 240  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.  
Deister Concentrator Co., 915  
Glasgow Ave., Fort Wayne,  
Ind.  
Deister Machine Co., 1933 E.  
Wayne St., Ft. Wayne 4,  
Ind. 228  
The Frog Switch & Mfg.  
Co., Carlisle, Penn. 243  
Greenville Mfg. Works,  
Greenville, Ohio  
Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Lippmann Eng. Wks., 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
W. A. Riddell Corp., Bucy-  
rus, Ohio  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
Simplicity Engr. Co., 213 S.  
Oak, Durand, Mich. 32  
Smith Engr. Wks., 532 E.  
Capitol Dr., Milwaukee 12,  
Wis. 56  
Straub Mfg. Co., Inc., 507  
Chestnut St., Oakland 7,  
Calif.  
Traylor Eng. & Mfg. Co.,  
Allentown, Penn. 7  
W. S. Tyler Co., 3615 Supe-  
rior Ave., Cleveland 14,  
Ohio 231  
Universal Road Machinery  
Co., 27 Emerick St., King-  
ston, N. Y. 239  
Webster Mfg. Inc., Tiffin,  
Ohio

## SCREEN PLATES, Perforated Metal

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.  
C. O. Bartlett & Snow Co.,  
6194 Harvard Ave., Cleve-  
land, Ohio  
Chicago Perforating Co., 2445  
W. 24th Pl., Chicago, Ill. 218  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.  
Cross Eng. Co., Carbondale,  
Penn. 238  
Gruendler Crusher & Pulver-  
izer Co., 2915-17 N. Market  
St., St. Louis, Mo. 177  
The Harrington & King Per-  
forating Co., 5850 Fillmore  
St., Chicago 44, Ill. 246  
Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235  
Iowa Mfg. Co., 916 16th St.  
N.E., Cedar Rapids, Iowa. 166  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Manganese Steel Forge Co.,  
Richmond St. & Castor  
Ave., Philadelphia, Penn.  
Morrow Mfg. Co., 722 E.  
Tenth St., Wellston, Ohio  
Northmann-Duffke Co., 2740  
S. 32nd St., Milwaukee,  
Wis.

Prater Pulverizer Co., 1829  
S. 55th Ave., Chicago 50,  
Ill.  
Simplicity Engr. Co., 213 S.  
Oak, Durand, Mich. 32  
Traylor Eng. & Mfg. Co.,  
Allentown, Penn. 7  
W. Toepfer & Sons, Inc.,  
1450 E. Park Pl., Milwau-  
kee 11, Wis.  
Universal Road Machinery,  
27 Emerick St., Kingston,  
N. Y. 239

## SCREENING Plants, Portable (See Crushing and Screening Plants)

SCREENS, Gravity  
Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.  
Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
Chicago Perforating Co., 2445  
W. 24th Pl., Chicago, Ill. 218  
Cleveland Wire Cloth & Mfg.  
Co., 3573 E. 78th St.,  
Cleveland 5, Ohio 240  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.  
Diamond Iron Works, 1800 N.  
2nd St., Minneapolis, Minn. 105  
Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235  
Iowa Mfg. Co., 916 16th St.  
N.E., Cedar Rapids, Iowa. 166  
Kent Mill Co., 10 Rapelye St.,  
Brooklyn 31, New York,  
N. Y.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Lippmann Eng. Works, 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
Maddox Fdry. & Machine  
Wks., Archer, Florida  
W. A. Riddell Corp., Bucy-  
rus, Ohio  
John A. Roebbing's Sons Co.,  
640 S. Broad, Trenton 2,  
N. J.  
W. S. Tyler Co., 3615 Supe-  
rior Ave., Cleveland 14,  
Ohio 231  
Universal Eng. Corp., 625 C  
Ave. W., Cedar Rapids,  
Iowa

## SCREENS, Grizzly

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Alloys Steel & Metals Co.,  
1862 E. 55th St., Los An-  
geles 11, Calif.  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201  
Audubon Wire Cloth Corp.  
(Subsidiary of Manganese  
Steel Forge Co.), Rich-  
mond St. & Castor Ave., Phila-  
delphia, Penn.  
Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244  
C. O. Bartlett & Snow Co.,  
6194 Harvard Ave., Cleve-  
land, Ohio  
Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.  
Bonded Scale Co., 128 Bell-  
view, Columbus 7, Ohio  
Chicago Perforating Co., 2445  
W. 24th Pl., Chicago, Ill. 218  
Cleveland Wire Cloth & Mfg.  
Co., 3573 E. 78th St.,  
Cleveland, Ohio 240  
Colorado Fuel & Iron Corp.,  
P. O. Box 1920, Denver 1,  
Colo.  
The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.  
Greenville Mfg. Works,  
Greenville, Ohio

Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235  
Iowa Mfg. Co., 916 16th St.  
N. E., Cedar Rapids, Iowa 166  
The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51  
Kennedy-Van Saun Mfg. &  
Eng. Co., 2 Park Ave.  
Bldg., New York, N. Y. 10, 11  
Kensington Steel Co., 505  
Kensington Ave., Chicago,  
Ill.  
Korb-Pettit Wire Fabrics &  
Iron Works, N. Mascher,  
above Jefferson St., Phila-  
delphia, Penn.  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Lippmann Eng. Works, 4603  
W. Mitchell St., Milwau-  
kee 14, Wis.  
Maddox Foundry & Machine  
Works, Archer, Fla.  
Morse Bros. Machinery Co.,  
2900 Broadway, Denver 1,  
Colo.  
Nordberg Mfg. Co., 3073 S.  
Chase Ave., Milwaukee 7,  
Wis. 34  
Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.  
John A. Roebbing's Sons Co.,  
640 S. Broad St., Trenton  
2, N. J.  
Rogers Iron Works Co., 11th  
& Pearl, Joplin, Mo. 200  
Simplicity Engr. Co., 213 S.  
Oak, Durand, Mich. 32  
Stephens-Adams Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill. 6  
Syntro Co., 450 Lexington  
Ave., Homer City, Penn.  
Traylor Eng. & Mfg. Co.,  
Allentown, Penn. 7  
The W. S. Tyler Co., 3615  
Superior St., Cleveland 14,  
Ohio 231  
Universal Eng. Corp., 625 C  
Ave. W., Cedar Rapids,  
Iowa  
Webster Mfg. Inc., Tiffin,  
Ohio  
Wisconsin Foundry & Ma-  
chine Co., 623 E. Main,  
Madison 1, Wis.

## SCREENS, Laboratory

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Buffalo Wire Works Co.,  
Inc., 437 Terrace, Buffalo,  
N. Y.  
Chicago Perforating Co., 2445  
W. 24th Pl., Chicago, Ill. 218  
The Deister Concentrator  
Co., 915 Glasgow Ave., Ft.  
Wayne, Ind.  
The Denver Equipment Co.,  
1400 17th St., Denver 17,  
Colo. 31  
The Gilson Screen Co., P.O.  
Box 186, Mercer, Penn.  
Hendrick Mfg. Co., 39 Dun-  
daff St., Carbondale, Penn. 235  
Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill. 1  
Palo Myers, Inc., 31 Reade  
St., New York 17, N. Y.  
John A. Roebbing's Sons Co.,  
640 S. Broad St., Trenton  
2, N. J.  
Sturtevant Mill Co., 103 Clay-  
ton St., Dorchester, Boston  
22, Mass. 30  
The W. S. Tyler Co., 3615  
Superior St., Cleveland 14,  
Ohio 231  
Universal Vibrating Screen  
Co., Deane Blvd. & St.  
Paul R. R., Racine, Wis. 230

## SCREENS, Revolving

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.  
Audubon Wire Cloth Corp.,  
(Subsidiary of Manganese  
Steel Forge Co.), Rich-  
mond St. & Castor Ave.,  
Philadelphia, Penn.

# DIRECTORY

- Austin - Western Co., 601 Farnsworth Ave., Aurora, Ill. .... 53
- Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244
- The C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio
- Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.
- Chicago Perforating Co., 2445 W. 24th Pl., Chicago, Ill. .... 218
- The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.
- Coyle & Roth Co., Inc., 3024 S. E. 4th St., Minneapolis 14, Minn.
- Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247
- Eagle Crusher Co., Inc., Gallion, Ohio. .... 25
- Eagle Iron Works, 129 Holcomb Ave., Des Moines, Iowa .... 205
- Gifford-Wood Co., Hudson, N. Y.
- Greenville Mfg. Works, Greenville, Ohio
- Gründler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177
- George Halss Mfg. Co., 391 Canal Pl., New York 51, N. Y.
- Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235
- Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa 166
- The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51
- Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1
- Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11
- Kent Mill Co., 10 Rapelye St., Brooklyn 31, New York, N. Y.
- Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.
- McCarter Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.
- McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45
- Maddox Fdy. & Mach. Wks., Archer, Fla.
- Millville Iron Works, Inc., Sixth St. & Florence Ave., Millville, N. J.
- Morrow Mfg. Co., 722 E. Tenth St., Wellston, Ohio
- Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.
- New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226
- Nortmann-Duffke Co., 2740 S. 32nd St., Milwaukee, Wis.
- Pioneer Eng. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227
- Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200
- John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.
- Smith Engr. Wks., 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56
- Stearns Mfg. Co., Inc., Adrian, Mich. .... 208
- Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6
- W. Toepfer & Sons, Inc., 1450 E. Park Pl., Milwaukee 11, Wis.
- Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7
- Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa
- Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. .... 239
- The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.
- Coyle & Roth Co., Inc., 3024 S. E. 4th St., Minneapolis 14, Minn.
- The Delster Concentrator Co., 915 Glasgow Ave., Ft. Wayne, Ind.
- Delster Machine Co., 1933 E. Wayne St., Ft. Wayne 4, Ind. .... 228
- Denver Equipment Co., 1400 17th St., Denver 17, Colo. .... 31
- Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247
- Gründler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177
- George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.
- Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235
- Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa 166
- The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51
- Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11
- Kent Mill Co., 10 Rapelye St., Brooklyn 31, New York, N. Y.
- Lewistown Fdry. & Mach. Co., Lewistown, Penn.
- Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1
- Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.
- McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45
- Maddox Foundry & Machine Works, Archer, Fla.
- Madsen Iron Works, 5631 Bickett St., Huntington Park, Calif.
- Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio
- Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.
- New Holland Machine Co., 100 Franklin St., New Holland, Penn. .... 226
- Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis. .... 34
- Nortmann-Duffke Co., 2740 S. 32nd St., Milwaukee, Wis.
- Orville Simpson Co., 1230 Knowlton St., Cincinnati 23, Ohio
- Pioneer Eng. Wks., Inc., 1515 Central Ave., Minneapolis 13, Minn. .... 227
- Productive Equipment Corp., 2926 W. Lake St., Chicago 12, Ill.
- W. A. Riddell Corp., Bucyrus, Ohio
- Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.
- Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200
- John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.
- Screen Equipment Co., Inc., 9 Lafayette Ave., Buffalo 13, N. Y. .... 233
- Separations Eng. Corp., 110 E. 42nd St., New York 17, N. Y.
- Simplicity Engr. Co., 213 S. Oak, Durand, Mich. .... 32
- Smith Eng. Works, 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56
- Stearns Mfg. Co., Inc., Adrian, Mich. .... 208
- Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6
- Straub Mfg. Co., 507 Chestnut, Oakland, Calif.
- Sturtevant Mill Co., 103 Clayton Street, Dorchester, Boston 22, Mass. .... 39
- Sutton, Steele & Steele, Inc., 1031 S. Haskell, Dallas 10, Tex.
- W. Toepfer & Sons, Inc., 1450 E. Park Pl., Milwaukee 11, Wis.
- Trowbridge Conveyor Co., 750 Van Houten Ave., Clifton, N. J.
- The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio
- Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa
- Universal Vibrating Screen Co., Deane Blvd. & St. Paul R. R., Racine, Wis. .... 239
- Williams Patent Crusher & Pulverizer Co., 2701 North Broadway, St. Louis 6, Mo. .... 29
- Wisconsin Foundry & Machine Co., 623 East Main, Madison 1, Wis.
- SCREW CONVEYORS  
(See Conveyors, Screw)
- SCRUBBERS, Crushed Stone, Gravel
- Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.
- Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco, Calif.
- The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.
- Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247
- The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193
- Eagle Iron Works, 129 Holcomb, Des Moines, Iowa. .... 205
- Greenville Mfg. Wks., Greenville, Ohio
- Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225
- Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa 166
- Knickerbocker Co., 603 Liberty St., Jackson, Mich.
- Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. .... 1
- Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.
- McCarter Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.
- McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn. .... 45
- Maddox Foundry & Machine Wks., Archer, Fla.
- Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio
- Nordberg Process Machinery Co., Cleveland, Ohio
- Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. .... 92
- Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200
- Smith Eng. Works, 532 E. Capitol Dr., Milwaukee 12, Wis. .... 56
- Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6
- W. Toepfer & Sons, Inc., 1450 E. Park Pl., Milwaukee 11, Wis.
- Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7
- The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio .... 231
- Universal Eng. Corp., 625 C Ave. W., Cedar Rapids, Iowa
- Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y. .... 239
- Wisconsin Foundry & Machine Co., 623 East Main, Madison 1, Wis.
- SEAL RINGS, Kiln
- Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.
- The Babcock & Wilcox Co., 85 Liberty St., New York, N. Y. .... 82



# DIRECTORY

Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
Cement Mill Equipment Co., 9718 Otsego Ave., Detroit, Mich.  
Huron Industries, Inc., Alpena, Mich.  
Madsen Iron Works, 5631 Blckett St., Huntington Park, Calif.  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y.  
Traylor Eng. & Mfg. Co., Allentown, Penn.  
Vulcan Iron Works, 700 S. Main St., Wilkes-Barre, Penn.

## SEMI-TRAILERS, Truck

Austin - Western Co., 601 Farnsworth Ave., Aurora, Ill.  
Easton Car & Construction Co., Box 270, Easton, Penn.  
The Hell Co., 3000 W. Montana, Milwaukee, Wis.  
Hug Co., 6th St., Highland, Ill.  
Pacific Car & Foundry Co., 4th & Factory St., Renton, Wash.  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y.

## SEPARATORS, Air

(See Air Separators)

## SEPARATORS, Electrostatic

(See Electrical Separators)

## SEPARATORS, Magnetic

(See Magnetic Separators)

## SEPARATORS, Slurry

(See Slurry Filters)

## SEPTIC TANK MOLDS, Concrete

Ashland Vault Inc., 114 Seventh St., Ashland, Ohio  
Automatic Septic Tank Co., Gallon, Ohio  
Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.  
Unit System Septic Tanks Co., Oregon, Ill.

## SEWER PIPE MACHINES, Concrete

(See Pipe Molds & Machines)

## SHAFTING

Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.  
The American Brass Co., 414 Meadow St., Waterbury 88, Conn.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.  
C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
Bethlehem Steel Co., Bethlehem, Penn.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.  
Greenville Mfg. Works, Greenville, Ohio  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y.

Kent Machine Co., Cuyahoga Falls, Ohio  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
The Medart Co., 100 Potomac St., St. Louis 18, Mo.  
W. A. Riddell Corp., Bucyrus, Ohio  
Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
Vulcan Iron Works, 700 S. Main St., Wilkes-Barre, Penn.  
Wisconsin Foundry & Machine Co., 623 E. Main St., Madison 1, Wis.  
Wisconsin Steel Co., 180 N. Michigan Ave., Chicago, Ill.

## SHEAVES

Allis-Chalmers Mfg. Co., 1945 Prodcoc St., Milwaukee 1, Wis.  
American Holst & Derrick Co., 63 S. Roberts St., St. Paul 1, Minn.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.  
Bethlehem Steel Co., Bethlehem, Penn.  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Browning Mfg. Co., Inc., Maysville, Ky.  
C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.  
Clyde Iron Works, Inc., 29th Ave. W. & Michigan St., Duluth 1, Minn.  
Continental Gin Co., Industrial Div., 4500 5th Ave., Birmingham, Ala.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
The Dayton Rubber Mfg. Co., Riverview Ave., Dayton 1, Ohio  
Diamond Iron Works, Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.  
Dobbie Foundry Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.  
Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
The Frog Switch & Mfg. Co., Carlisle, Penn.  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.  
The B. F. Goodrich Co., Akron, Ohio  
George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.  
Iowa Mfg. Co., 916 16th St., N. E., Cedar Rapids, Iowa  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio  
W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill.  
Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Kent Machine Co., Cuyahoga Falls, Ohio  
Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.  
McLanahan & Stone Corp., 200 Wall St., Hollidaysburg, Penn.

Maddox Foundry & Machine Works, Archer, Fla.  
Magnolia Metal Co., 18 W. Jersey St., Elizabeth, N. J.  
Meckum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
D. J. Murray Mfg. Co., Wau-sau, Wis.  
Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
Pacific Car & Fdry. Co., 4th & Factory St., Renton, Wash.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo.  
Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.  
Sauerman Bros., Inc., 530 S. Clinton St., Chicago 7, Ill.  
Stephens-Adamson Mfg. Co., Ridgeway Ave., Aurora, Ill.  
Stroh Process Steel Co., 1423 High St., Pittsburgh, Penn.  
Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.  
The Upson-Walton Co., Perry Payne Bldg., Cleveland, Ohio  
Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn.  
Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.  
T. B. Wood's Sons Co., 1325 Fifth Ave., Chambersburg, Penn.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## SHOES, Safety

(See Safety Equipment)

## SHOVEL REPAIR PARTS

Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio  
Alloys Steel & Metals Co., 1862 E. 55th St., Los Angeles 11, Calif.  
American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.  
Audubon Wire Cloth Corp. (Subsidiary of Manganese Steel Forge Co.), Richmond St. & Castor Ave., Philadelphia, Penn.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis.  
Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
The Frog Switch & Mfg. Co., Carlisle, Penn.  
The General Excavator Co., Cheney St., Marion, Ohio  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Industrial Gear Mfg. Co., 4544 W. Van Buren St., Chicago 24, Ill.  
Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis.  
Lima Locomotive Wks., Inc., 1108 National Bank Bldg., Lima, Ohio  
Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio  
Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
Marion Steam Shovel Co., West Center St., Marion, Ohio  
Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
The Osgood Co., Marion, O.  
Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Taylor-Wharton Iron and Steel Co., High Bridge, N. J.

## SHOVELS, Compressed Air

Browning Crane & Shovel Co., 16226 Waterloo Rd. N.E., Cleveland, Ohio  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
Norberg Mfg. Co., 3073 S. Chase St., Milwaukee 7, Wis.  
The Osgood Co., Marion, O.  
Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.

## SHOVELS, Hand

The Wood Shovel & Tool Co., Roosevelt & Clark Sts., Piqua, Ohio.

## SHOVELS, Power, Diesel

Austin - Western Co., 601 Farnsworth Ave., Aurora, Ill.  
Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.  
Buckeye Tractor Ditcher Co., Crystal St., Findlay, Ohio.  
Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis.  
Byers Machine Co., Ravenna, Ohio.  
The Cooper-Bessemer Corp., Sandusky St., Mt. Vernon, Ohio.  
Enterprise Engine & Fdy. Co., 18th & Florida Sts., San Francisco 10, Calif.  
The General Excavator Co., Cheney St., Marion, Ohio.  
Hanson Clutch & Mchy. Co., Tiffin, Ohio.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich.  
Insley Mfg. Co., 801 Olney St., Indianapolis, Ind.  
Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn.  
Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis.  
Lima Locomotive Wks., Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio  
Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.  
Manitowoc Engr. Wks., Manitowoc, Wis.  
Marion Steam Shovel Co., W. Center St., Marion, Ohio.  
Michigan Power Shovel Co., Second & Miller Blvd., Benton Harbor, Mich.  
Northwest Engr. Co., 28 E. Jackson Blvd., Chicago 4, Ill.  
The Osgood Co., Marion, Ohio.  
The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio.

## SHOVELS, Power, Diesel Electric

Bucyrus-Erie Co., P. O. Box 56, So. Milwaukee, Wis.  
Fourth Cover  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.  
Manitowoc Engr. Wks., Manitowoc, Wis.  
Marion Steam Shovel Co., W. Center St., Marion, Ohio.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

# DIRECTORY

## SHOVELS, Power, Gasoline

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 53  
Fourth Cover

The Browning Crane & Shovel Co., 16226 Waterloo Rd., N.E., Cleveland, Ohio.  
Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio.

Byers Machine Co., Ravenna, Ohio.

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah.

The General Excavator Co., Cheney St., Marion, Ohio 46  
Hanson Clutch & Mch. Co., Tiffin, Ohio.

Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Industrial Brownhoist Corp., 135 Washington St., Bay City, Mich. 230

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind. 230  
Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn.

Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256

Lima Locomotive Works, Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio 235

Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189

Manitowoc Engr. Wks., Manitowoc, Wis. 35  
Marion Steam Shovel Co., W. Center St., Marion, Ohio 191

Michigan Power Shovel Co., Second & Miller Blvd., Benton Harbor, Mich.

Northwest Engr. Co., 25 E. Jackson Blvd., Chicago 4, Ill. 12

The Osgood Co., Marion, Ohio.  
"Quick-Way" Truck Shovel Co., P. O. Box 1800, Denver, Colo.

Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.

The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3

SHOVELS, Power, Gasoline-Electric

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53

Bucyrus-Erie Co., P. O. Box 56, So. Milwaukee, Wis. 53  
Fourth Cover

Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189

Manitowoc Engr. Wks., Manitowoc, Wis. 35  
Marion Steam Shovel Co., W. Center St., Marion, Ohio. 191

SHOVELS, Power, Steam

Bucyrus-Erie Co., P. O. Box 56, So. Milwaukee, Wis. 53  
Fourth Cover

Manitowoc Engr. Wks., Manitowoc, Wis. 35  
Marion Steam Shovel Co., W. Center St., Marion, Ohio. 191

SHOVELS, Power, Underground

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 53  
4th cover

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah

Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30

Lima Locomotive Works, Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio 235

Marion Steam Shovel Co., W. Center St., Marion, Ohio 191

Manitowoc Eng. Works, Manitowoc, Wis. 35  
Northwest Engr. Co., 25 E. Jackson Blvd., Chicago 4, Ill. 12

The Osgood Co., Marion, Ohio  
Sullivan Mch. Co., Woodland Ave., Michigan City, Ind.

The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3

SHOVELS, Tractor

Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis. 24  
Anthony Co., Inc., Sreator, Ill.

Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.

Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53

The Browning Crane & Shovel Co., 16226 Waterloo Rd., N.E., Cleveland, Ohio

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 53  
4th cover

The Byers Machine Co., Lock Box 390, Ravenna, Ohio

Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio

The General Excavator Co., Cheney St., Marion, Ohio 46  
Hanson Clutch & Mch. Co., Tiffin, Ohio

Hi-Way Service Corp., 3857 W. Wisconsin Ave., Milwaukee, Wis.

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.

Lima Locomotive Works, Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio 235

Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189

Manitowoc Eng. Works, Manitowoc, Wis. 35  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.

The Osgood Co., Marion, Ohio  
Ottawa Mfg. Co., Ottawa, Kan.

Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland, Calif.

Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.

SHOVELS, Truck-Mounted

Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.

The Browning Crane & Shovel Co., 16226 Waterloo Rd., N.E., Cleveland, Ohio

Bucyrus-Erie Co., P. O. Box 56, South Milwaukee, Wis. 53  
4th cover

The Byers Machine Co., Ravenna, Ohio

The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah

The General Excavator Co., Cheney St., Marion, Ohio 46  
Hanson Clutch & Mch. Co., Tiffin, Ohio

Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis. 256

Lima Locomotive Works, Inc., Shovel & Crane Div., 1108 National Bank Bldg., Lima, Ohio 235

Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill. 189

Marion Steam Shovel Co., W. Center St., Marion, Ohio

Michigan Power Shovel Co., Second & Miller Blvd., Benton Harbor, Mich.

Northwest Eng. Co., 28 E. Jackson Blvd., Chicago 4, Ill. 12

The Osgood Co., Marion, Ohio  
"Quick-Way" Truck Shovel Co., 4150 Josephine St., Denver, Colo.

Spears-Wells Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.

The Thew Shovel Co., 1374 E. 28th St., Lorain, Ohio. 3

SHREDDERS, Plaster

American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo. 57

SIEVES, Testing

Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Penn.

Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235

Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.

The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231

SILL FORMS, Concrete

SILO STAVE MACHINES, Concrete

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218

Besser Mfg. Co., Alpena, Mich. 211

Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. 242

Chain-Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

Dempster Bros., Inc., Springdale Ave., Knoxville, Tenn. 255

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

Stearns Mfg. Co., Inc., Adrian, Mich. 208

Webster Mfg. Inc., Tiffin, Ohio

SKIPS, Hoist

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218

Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.

Besser Mfg. Co., Alpena, Mich. 211

Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. 242

C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.

The Chase Foundry & Mfg. Co., Columbus 7, Ohio

Clyde Iron Wks., 39th Ave. W. and Michigan St., Duluth 1, Minn.

Concrete Transport Mixer Co., 650 Rosedale Ave., St. Louis 12, Mo. 219

Dempster Bros., Inc., Springdale Ave., Knoxville, Tenn. 255

Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.

Greenville Mfg. Works, Greenville, Ohio

Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

McKierman-Terry Corp., 15 Park Row, New York 7, N. Y.

Dempster Bros., Inc., Springdale Ave., Knoxville, Tenn. 255

The Elmco Corp., P. O. Box 300, Salt Lake City, Utah

Godfrey Conveyor Co., Inc., 13th & Wolf, Elkhart, Ind.

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver 17, Colo.

Pressed Steel Car Co., Industrial Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202

Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8

Webster Mfg., Inc., Tiffin, Ohio

SKIP LOADERS

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218

Besser Mfg. Co., Alpena, Mich. 211

Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. 242

Chain-Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223

Dempster Bros., Inc., Springdale Ave., Knoxville, Tenn. 255

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

Stearns Mfg. Co., Inc., Adrian, Mich. 208

Webster Mfg. Inc., Tiffin, Ohio

SKIPS, Hoist

Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218

Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.

Besser Mfg. Co., Alpena, Mich. 211

Brooks Equipment & Mfg. Co., 408 Davenport Rd., Knoxville, Tenn. 242

C. S. Card Iron Works Co., 2501 W. 16th Ave., Denver, Colo.

The Chase Foundry & Mfg. Co., Columbus 7, Ohio

Clyde Iron Wks., 39th Ave. W. and Michigan St., Duluth 1, Minn.

Concrete Transport Mixer Co., 650 Rosedale Ave., St. Louis 12, Mo. 219

Dempster Bros., Inc., Springdale Ave., Knoxville, Tenn. 255

Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.

Greenville Mfg. Works, Greenville, Ohio

Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. 47

Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.

The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51

W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. 26

Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1

Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.

McKierman-Terry Corp., 15 Park Row, New York 7, N. Y.

# DIRECTORY

Maddox Foundry & Machine Works, Archer, Fla.  
 Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.  
 Multiplex Concrete Machinery Co., Elmore, Ohio..... 217  
 Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. .... 200  
 Stearns Mfg. Co., Inc., Adrian, Mich. .... 208  
 Stearns Rogers Mfg. Co., 1718-22 California St., Denver 2, Colo.  
 Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Street Bros. Machine Co., 415 Ochs Bldg., Chattanooga 2, Tenn.  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn.  
 Webster Mfg., Inc., Tiffin, Ohio  
**SLAKERS**  
 (See Hydrators, Lime)  
**SLINGS, Wire Rope**  
 (See Wire Rope Slings)  
**SLUGS, Grinding**  
 (See Grinding Media)  
**SLURRY AGITATORS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
 The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah  
 The Galigher Co., 48 S. 2nd East St., Salt Lake City, Utah  
 Groch Engr. Co., 623 W. 9th St., Los Angeles 15, Calif.  
 Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225  
 International Engr., Inc., Bolander Ave., Dayton 1, Ohio  
 Manitowoc Eng. Works., Manitowoc, Wis. .... 35  
 Omega Machine Co., 9 Codding St., Providence 1, R. I.  
 Patterson Fdy. & Mch. Co., East Liverpool, Ohio.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129  
 Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
 Western Machinery Co., 760 Folsom St., San Francisco, Calif.  
 A. R. Willey & Sons, Inc., P.O. Box 2330, Denver 17, Colo. .... 179  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.  
**SLURRY FILTERS**  
 Bird Machine Co., S. Walpole, Mass. .... 130  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah  
 Filter Media Corp., Irvington-on-Hudson, N. Y.  
 The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
 Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
**SLURRY MIXERS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193

The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah  
 International Engr., Inc., Bolander Ave., Dayton 1, Ohio  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
 Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
 Patterson Fdry. & Mach. Co., E. Liverpool, Ohio  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129  
 Struthers Wells Corp., 1003 Pennsylvania Ave., W. Warren, Penn.  
**SLURRY PUMPS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
 The Deming Co., 150 Broadway, Salem, Ohio  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
 The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah  
 Georgia Iron Wks., 605 Twelfth St., Augusta, Ga.  
 Hillis-McCanna Co., 3025 N. Western Ave., Chicago 18, Ill.  
 Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.  
 Millville Irons Works, Inc., Sixth St. & Florence Ave., Millville, N. J.  
 Morris Machine Works, 31 E. Genesee St., Baldwinville, N. Y.  
 Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. .... 2nd Cover  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129  
 Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
 Western Machinery Co., 760 Folsom St., San Francisco, Calif.  
 A. R. Willey & Sons, Inc., P.O. Box 2330, Denver 17, Colo. .... 179  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J.  
**SLURRY SCREENS**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Buffalo Wire Wks. Co., 308-332 Terrace, Buffalo, N. Y.  
 Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn. .... 1  
 Productive Equipment Corp., 2926 W. Lake St., Chicago 12, Ill.  
 The W. S. Tyler Co., 3615 Superior Street, Cleveland 14, Ohio .... 231  
**SLURRY SEPARATORS**  
 Bird Machine Co., S. Walpole, Mass. .... 130  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
 The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah

Patterson Fdry. & Mach. Co., E. Liverpool, Ohio  
 Separation Process Co., Fuller Bldg., Catasauqua, Penn.  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129  
 Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.  
 Western Machinery Co., 760 Folsom St., San Francisco, Calif.  
**SLURRY THICKENERS**  
 Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
 The Dorr Co., 570 Lexington Ave., New York 22, N. Y. 193  
 The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah  
 The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
 Hardinge Co., Inc., 240 Arch St., York, Penn. .... 225  
 Separation Process Co., Fuller Bldg., Catasauqua, Penn.  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. .... 129  
 Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
 Western Machinery Co., 760 Folsom St., San Francisco, Calif.  
**SMOKESTACKS**  
 Alpha Tank & Sheet Metal Co., 5001 S. 38th St., St. Louis 16, Mo.  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 62  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Chicago Bridge & Iron Co., 333 S. Michigan Ave., Chicago 4, Ill.  
 Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 The Kirk & Blum Mfg. Co., 2907 Spring Grove Ave., Cincinnati 25, Ohio  
 McCarter Iron Works, Inc., Mill & Washington Sts., Norristown, Penn.  
 Maddox Foundry & Machine Works, Archer, Fla.  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
 Millville Iron Works, Inc., Sixth St. & Florence Ave., Millville, N. J.  
 Minneapolis - Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.  
 Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.  
 Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.  
 The Wickes Boiler Co., 515 N. Washington Ave., Saginaw, Mich.  
**SOCKETS, Wire Rope**  
 (See also Wire Rope Fittings)  
 American Cable Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. .... 3rd Cover  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio

Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.  
 Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
 Electroline Co., 4121 S. La Salle St., Chicago, Ill.  
 Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. .... 58  
 Thomas Laughlin Co., 143 Fore St., Portland, Maine. 2  
 A. Leachen & Sons Rope Co., 5909 Kennedy Ave., St. Louis 12, Mo. .... 221  
 Macwhyrte Co., 2949 14th Ave., Kenosha, Wis. .... 246  
 John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 United States Steel Supply Co., 1319 Wabansia Ave., Chicago, Ill.  
**SOFT STONE ELIMINATORS**  
 (See also Scrubbers)  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Greenville Mfg. Wks., Greenville, Ohio  
 Gruender Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo. .... 177  
 Knickerbocker Co., 603 Liberty St., Jackson, Mich.  
 Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis.  
 McLanahan & Stone, 200 Wall St., Hollidaysburg, Penn. .... 45  
 Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Penn. .... 92  
 Simplicity Engr. Co., 213 S. Oak, Durand, Mich. .... 32  
 Smith Eng. Wks., 532 E. Capitol Dr., Milwaukee, Wis. .... 58  
**SPEED REDUCERS**  
 (See also Gear Reducers)  
 Abart Gear & Mach. Co., 4834 W. 16th St., Chicago 50, Ill.  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee 1, Wis.  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244  
 The Cleveland Worm & Gear Co., 3272 E. 8th St., Cleveland 4, Ohio  
 Continental Gln Co., Industrial Div., 4500 5th Ave., Birmingham, Ala. .... 233  
 DeLaval Steam Turbine Co., Trenton, N. J.  
 Falk Corp., 3001 W. Canal St., Milwaukee 8, Wis.  
 Farrell-Birmingham Co., Inc., Ansonia, Conn.  
 Foote Bros. Gear & Machine Corp., 5225 South Western Blvd., Chicago 9, Ill.  
 Huron Industries, Inc., Alpena, Mich.  
 Gears & Forgings, Inc., 3012 Woodhill Rd., Cleveland, Ohio  
 The Godfrey Conveyor Co., 13th & Wolf, Elkhart, Ind.  
 Graham Transmission, Inc., 3754 N. Holton St., Milwaukee 12, Wis.  
 Joshua Hendy Iron Wks., Box 37, Sunnyvale, Calif. .... 47  
 Iowa Mfg. Co., 816 16th St. N.E., Cedar Rapids, Iowa. 166  
 D. O. James Mfg. Co., 1140 W. Monroe St., Chicago, Ill.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio .... 51  
 W. A. Jones Foundry & Machine Co., 4401 Roosevelt Rd., Chicago 24, Ill. .... 28



# DIRECTORY

Kent Machine Co., Cuyahoga Falls, Ohio ..... 232  
 Link-Belt Co., 2045 W. Huntington Park Ave., Philadelphia 40, Penn. .... 1  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif. ....  
 Ottumwa Iron Works, 402 W. Main St., Ottumwa, Iowa .....  
 Palmer-Bee Co., 1753 Poland Ave., Detroit, Mich. ....  
 Patterson Fdry. & Mach. Co., E. Liverpool, Ohio .....  
 Philadelphia Gear Wks., Inc., Erie Ave. & G St., Philadelphia 34, Penn. ....  
 Reeves Pulley Co., Columbus, Ind. ....  
 Winfield E. Smith, Inc., Springfield, Erie County, N. Y. ....  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 The Webb Corp., 403 E. Broadway, Webb City, Mo. ....  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn. ....  
 Worthington Pump & Machinery Corp., 744 Broad St., Newark 2, N. J. ....  
**SPOUTS (See also Chutes)**  
 Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo. ....  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
 L. Burmeister Co., 3225 W. Burnham St., Milwaukee 4, Wis. ....  
 Gruendler Crusher & Pulv. Co., 2915-17 N. Market St., St. Louis, Mo. .... 177  
 George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y. ....  
 Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio .....  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio .....  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill. ....  
 Sprout, Waldron & Co., Muncy, Penn. ....  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Traylor Eng. & Mfg. Co., Allentown, Penn. .... 7  
 The Webb Corp., 402 E. Broadway, Webb City, Mo. ....  
 Webster Mfg., Inc., Tiffin, Ohio .....  
**SPRAY COOLING SYSTEMS**  
 American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich. ....  
 Binks Mfg. Co., 3114-40 Carroll Ave., Chicago 12, Ill. ....  
 Buffalo Forge Co., P. O. Box 985, Buffalo, N. Y. ....  
 Spraying Systems Co., 4021 W. Lake St., Chicago, Ill. ....  
**SPRAYS, Water**  
 Binks Mfg. Co., 3114 Carroll Ave., Chicago 12, Ill. ....  
 The Delster Concentrator Co., 915 Glasgow Ave., Ft. Wayne, Ind. ....  
 Delster Machine Co., 1933 E. Wayne St., Ft. Wayne 4, Ind. .... 200  
 Spraying Systems Co., 4021 W. Lake St., Chicago 24, Ill. ....  
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 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. .... 244

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 Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif. ....  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. .... 223  
 Continental Gin Co., Industrial Div., 4500 5th Ave., Birmingham, Ala. .... 233  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif. ....  
 Diamond Chain & Mfg. Co., 520 Kentucky Ave., Indianapolis 7, Ind. ....  
 Diamond Iron Wks., Inc. & The Mahr Mfg. Co., Div., 1800 N. 2nd St., Minneapolis 11, Minn. .... 247  
 Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio The Frog, Switch & Mfg. Co., Carlisle, Penn. .... 243  
 Gruendler Crusher & Pulv. Co., 2915-17 N. Market St., St. Louis, Mo. .... 177  
 George Halss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y. ....  
 Industrial Gear Mfg. Co., 4544 W. Van Buren St., Chicago 24, Ill. .... 227  
 Iowa Mfg. Co., 916 16th St. N.E., Cedar Rapids, Iowa. 166  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16 Ohio ..... 51  
 W. A. Jones Fdry. & Mach. Co., 4401 Roosevelt Rd., Chicago, Ill. .... 26  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill. ....  
 Kent Machine Co., Cuyahoga Falls, Ohio ..... 219  
 Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind. ....  
 Lippmann Eng. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis. ....  
 McLanahan & Stone Corp., 200 Wall St., Holidaysburg, Penn. .... 45  
 Maddox Foundry & Machine Wks., Archer, Fla. ....  
 Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif. ....  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio .....  
 Morse Chain Co., Turner Pl., Ithaca, N. Y. ....  
 Palmer-Bee Co., 1753 Poland Ave., Detroit, Mich. ....  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill. ....  
 Philadelphia Gear Wks., Inc., Erie Ave. & G St., Philadelphia 34, Penn. ....  
 Rogers Iron Wks. Co., 11th & Pearl, Joplin, Mo. .... 200  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. .... 6  
 Stroh Process Steel Co., 1428 High St., Pittsburgh, Penn. ....  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
 Webster Mfg., Inc., Tiffin, Ohio .....  
 Wisconsin Fdry. & Mach. Co., 623 E. Main, Madison, Wis. ....  
**STACKS, Smoke (See Smokestacks)**  
**STAIR TREADS & STEPS, Industrial**  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 The B. F. Goodrich Co., Akron, Ohio ..... 8  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 215  
 Fred T. Kern Co., P. O. Box 2057, Milwaukee 1, Wis. ....  
 Klrz Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio. ....

Lippman Engr. Wks., 4603 W. Mitchell St., Milwaukee 14, Wis. ....  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo. ....  
 Quaker Rubber Corp., Comly & Milnor St., Philadelphia 24, Penn. .... 171  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. .... 169  
 Southern Friction Materials Co., P. O. Box 1475, Charlotte 1, N. C. ....  
 U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y. ....  
**STANDPIPES**  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Chicago Bridge & Iron Co., 332 S. Michigan, Chicago 4, Ill. ....  
 Lancaster Iron Wks., Inc., 550 S. Prince, Lancaster, Penn. ....  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn. ....  
 Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif. ....  
**STARTERS, Motor (See Electrical Equipment)**  
 Allis-Chalmers Mfg. Co., 1945 Prodroc St., Milwaukee, Wis. ....  
 General Electric Co., 1 River Rd., Schenectady, N. Y. ....  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn. ....  
**STEAM-CURING EQUIPMENT, Concrete**  
 Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. .... 218  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. .... 215  
 Multiplex Concrete Machinery Co., Elmore, Ohio. .... 217  
**STEAM ENGINES, Stationery (See Engines)**  
**STEEL, Abrasion-Resisting.**  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 62  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Blaw-Knox Co., Blawnox, Penn. .... 245  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn. ....  
 Farrell-Cheek Steel Co., P. O. Box 721, Sandusky, Ohio .....  
 Jones & Laughlin Steel Corp., Muncy, Penn. ....  
 Kaiser Co., Inc., Iron & Steel Div., Latham Bldg., Oakland 12, Calif. ....  
 Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn. ....  
 Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill. ....  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio .....  
 Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. .... 200  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. .... 169  
 Stroh Process Steel Co., 1428 High Street, Pittsburgh, Penn. ....  
 Stulz-Sickles Co., 134 Lafayette St., Newark 5, N. J. ....  
 Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 16  
 The Timken Roller Bearing Co., Canton, Ohio. .... 4

Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. .... 8  
**STEEL, BAR**  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 15, Ohio .....  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn. ....  
 Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo. ....  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif. ....  
 Kaiser Co., Inc., Iron & Steel Div., Latham Bldg., Oakland, Calif. ....  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif. ....  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio .....  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. .... 169  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind. ....  
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 Wisconsin Steel Co., 180 N. Michigan Ave., Chicago, Ill. ....  
**STEEL, Electric Furnace**  
 American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. .... 201  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn. ....  
 Chicago Steel Fdy. Co., 3720 So. Kedzie Ave., Chicago, Ill. ....  
 The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah .....  
 Kaiser Co., Inc., Iron & Steel Div., Latham Bldg., Oakland 12, Calif. ....  
 Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn. ....  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio .....  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. .... 169  
 Taylor-Wharton Iron and Steel Co., High Bridge, N. J. .... 16  
 The Timken Roller Bearing Co., Canton, Ohio. .... 4  
**STEEL (Heat Resisting)**  
 Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. .... 62  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn. ....  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif. ....  
 Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif. ....  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. .... 169  
 The Timken Roller Bearing Co., Canton, Ohio. .... 4  
**STEEL, Open Hearth**  
 Bethlehem Steel Co., Bethlehem, Penn. .... 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn. ....  
 Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo. ....  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif. ....

# DIRECTORY

The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Jones & Laughlin Steel Co., Muncy, Penn.  
 Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. 169  
 Tennessee Coal, Iron & Railroad Co., Brown - Marx Bldg., Birmingham 2, Ala.  
 The Timken Roller Bearing Co., Canton, Ohio 4  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8  
 Wisconsin Steel Co., 180 N. Michigan Ave., Chicago, Ill.

## STEEL PLATE

Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Kaiser Co., Inc., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.  
 Minneapolis - Moline Power Implement Co., Box 1050, Minneapolis 1, Minn. 22  
 Pacific Car & Fdry Co., 4th & Factory St., Renton, Wash.  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
 Pressed Steel Car Co., 2500 Koppers Bldg., Pittsburgh, Penn. 202  
 Republic Steel Co., Republic Bldg., Cleveland, Ohio  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. 169  
 Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
 Tennessee Coal, Iron & Railroad Co., Brown - Marx Bldg., Birmingham 2, Ala.  
 Wisconsin Steel Co., 180 N. Michigan Ave., Chicago, Ill.

## STEEL, Special Alloy

Allied Steel Products, Inc., 1109 N. B. C. Bldg., Cleveland, Ohio  
 Alloy Cast Steel Co., Marion, Ohio  
 American Manganese Steel Div. of American Brake Shoe Co., 339 E. 14th St., Chicago Heights, Ill. 201  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
 Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.  
 The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y. 4  
 Kaiser Co., Iron & Steel Div., Latham Square Bldg., Oakland 12, Calif.  
 Kensington Steel Co., 505 Kensington Ave., Chicago, Ill.  
 Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
 Pacific Car & Fdry Co., 4th & Factory St., Renton, Wash.

Republic Steel Co., Republic Bldg., Cleveland, Ohio  
 Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill. 169  
 Stultz-Sickles Co., 134 Lafayette St., Newark 5, N. J.  
 Taylor-Wharton Iron & Steel Co., High Bridge, N. J. 16  
 The Timken Roller Bearing Co., Canton, Ohio 4  
 Wisconsin Steel Co., 180 N. Michigan, Chicago, Ill.

## STEP FORMS, Concrete

Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Kirk & Blum Mfg. Co., 2907 Spring Grove Ave., Cincinnati 25, Ohio  
 Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.  
 Multiplex Concrete Mchry. Co., Elmore, Ohio 217

## STOKERS, Coal, for Lime Kilns, etc.

Arnold & Weigel, Inc., Woodville, Ohio  
 The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
 Combustion Eng. Corp., 1315 N. Branch St., Chicago, Ill. 18, 19  
 Diamond Iron Works, Inc., & The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
 Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
 The Her-Born Engr. & Mfg. Co., Box 666, Sandusky, Ohio  
 Iron Fireman Mfg. Co., 3170 W. 106th St., Cleveland 11, Ohio  
 Link-Belt Co., 2410 18th St., Chicago 8, Ill. 1  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## STORAGE SYSTEMS, Radial

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 175  
 Fred T. Kern Co., Box 2057, Milwaukee 1, Wis.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 The Nicholson Co., 10 Rockefeller Plaza, New York 20, N. Y.  
 Sauerman Bros., Inc., 530 S. Clinton St., Chicago, Ill. 230  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6

## STRANDS, Wire

American Cable Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn.  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.  
 Colorado Fuel & Iron Corp., P. O. Box 1020, Denver 1, Colo.  
 Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 58  
 John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.

## STRETCHER OUTFITS (See Safety Equipment)

## STRUCTURAL STEEL FABRICATION

American Bridge Co., Frick Bldg., Pittsburgh, Penn.  
 American Steel Dredge Co., Inc., 2500 W. Taylor St., Ft. Wayne, Ind.

Bethlehem Steel Co., Bethlehem, Penn. 22  
 Blaw-Knox Co., Blawnox, Penn. 245  
 Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Dobbie Foundry & Machine Co., 146-170 Portage Rd., Niagara Falls, N. Y.  
 The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
 The Galigher Co., 48 S. 2nd East St., Salt Lake City 1, Utah  
 Greenville Mfg. Works, Greenville, Ohio  
 Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Fred T. Kern Co., Box 2057, Milwaukee 1, Wis.  
 Madson Iron Wks., 5631 Beckett St., Huntington Park, Calif.  
 The R. C. Mahon Co., 231 S. La Salle St., Chicago 4, Ill.  
 Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
 Pressed Steel Car Co., 2500 Koppers Bldg., Pittsburgh, Penn. 202  
 Joseph T. Ryerson & Son, Inc., 16th & Rockwell St., Chicago, Ill. 169  
 Standard Steel Corp., 5001 Boyle St., Los Angeles, Calif.  
 Truscon Steel Co., Albert St., Youngstown, Ohio  
 Vulcan Iron Wks., 730 S. Main St., Wilkes-Barre, Penn. 8  
 Webster Mfg. Inc., Timin, Ohio

## STUCCO COLORS (See Cement & Mortar Colors)

## SUPERHEATERS (See Boilers)

## SWITCHBOARDS & PANELS (See Electrical Equipment)

## SWITCHES (Control, Electric) (See Electrical Equipment)

## SWITCHES, Magnetic (See Electrical Equipment)

## SWITCHES, Track

American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill. 201  
 The Central Frog & Switch Co., Station O, Box 9, Cincinnati, Ohio  
 Chase Fdy. & Mfg. Co., Columbus 7, Ohio  
 The Frog Switch & Mfg. Co., Carlisle, Penn. 243  
 Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
 Pressed Steel Car Co., Industrial Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 202

## TABLES, Washing, Concentrating (See also Concentrating Tables)

Allen Cone & Mchry. Corp., 120 Broadway, New York 5, N. Y.  
 The Delster Concentrator Co., 915 Glasgow Ave., Ft. Wayne, Ind.  
 Delster Machine Co., 1933 E. Wayne St., Ft. Wayne 4, Ind. 228  
 Groch Engr. Co., 626 W. 9th St., Los Angeles 15, Calif.

The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver 17, Colo.  
 Separations Eng. Corp., 110 E. 42nd St., New York 17, N. Y.

## TACHOMETERS, Counters, etc.

Bristol Co., Waterbury 91, Conn.  
 Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
 The Foxboro Co., Neponset Ave., Foxboro, Mass.  
 Reliance Electric & Engr. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio  
 Westinghouse Electric & Mfg. Co., Hill St., E. Pittsburgh, Penn.

## TAMP MACHINES, Concrete, Hand & Power

Anchor Concrete Machinery Co., 1191 Fairview Ave., Columbus 8, Ohio. 218  
 Besser Mfg. Co., Alpena, Mich. 211  
 Kent Machine Co., Cuyahoga Falls, Ohio. 219  
 Madson Iron Wks., 5631 Beckett St., Huntington Park, Calif.  
 Miles Mfg. Co., 545-7 Hupp Ave., Jackson, Mich.  
 Multiplex Concrete Machinery Co., Elmore, Ohio. 217  
 Quinn Wire & Iron Wks., Boone, Iowa  
 Stearns Mfg. Co., Inc., Adrian, Mich. 208

## TANKS, Air

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
 C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
 Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. 40  
 Curtis Pneumatic Machinery Co., 1963 Kienlen Ave., St. Louis, Mo.  
 J. P. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
 Gardner-Denver Co., Gardner & First Ave., Quincy, Ill. 38  
 Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
 Kennedy-Van Saun Mfg. & Eng. Co., 2 Park Avenue Bldg., New York, N. Y. 10, 11  
 Kirk & Blum Mfg. Co., 2907 Spring Grove Ave., Cincinnati 25, Ohio  
 Manitowoc Eng. Works., Manitowoc, Wis. 35  
 Morse Bros. Mchry. Co., 2900 Broadway, Denver 1, Colo.  
 National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
 Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
 Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
 Standard Steel Corp., 5001 Boyle St., Los Angeles, Calif.  
 Struthers Wells Corp., 1003 Pennsylvania Ave. W., Warren, Penn.  
 Traylor Engr. & Mfg. Co., Allentown, Penn. 7  
 Wisconsin Foundry & Machine Co., 623 E. Main St., Madison 1, Wis.

## TANKS, Electric Bitumen Heating

Easton Car & Construction Co., Box 270, Easton, Penn.

## TANKS, Gasoline

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.

# DIRECTORY

The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.  
J. F. Devine Mfg. Co., Inc., 909 Shawnee, Mt. Vernon, Ill.  
Firestone Tire & Rubber Co., 1200 Firestone Pkwy., Akron 17, Ohio. 91  
Gar Wood Industries, Inc., 7924 Riopelle St., Detroit 11, Mich.  
The Heil Co., 3000 W. Montana St., Milwaukee 1, Wis.  
Lancaster Iron Wks., Inc., 550 S. Prince St., Lancaster, Penn.  
National Steel Prod. Co., 1611 Crystal Ave., Kansas City 3, Mo.  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Pittsburgh-Des Moines Steel Co., 3438 Neville Island, Pittsburgh, Penn.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Truckstell Mfg. Co., 1672 Union Commerce Bldg., Cleveland, Ohio.

## TANKS, Sand Settling

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Delster Mach. Co., 1933 E. Wayne St., Fort Wayne, Ind. 228  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
Eagle Iron Works, 129 Holcomb, Des Moines, Iowa. 205  
Greenville Mfg. Wks., Greenville, Ohio  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
The Klrk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati, Ohio  
Mechum Engr. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

## TANKS, Storage, Concrete

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
C. S. Johnson, P.O. Box 71, Chicago, Ill. 234  
Klrk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio.  
MacDonald Engr. Co., 188 W. Randolph St., Chicago 1, Ill.  
E. C. Machin Co., 624 Commonwealth Bldg., Allentown, Penn.  
Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.  
Morrow Mfg. Co., 711 E. 10th St., Wellston, Ohio  
The Neff & Fry Co., Camden, Ohio  
The Nicholson Co., Inc., 10 Rockefeller Plaza, New York 20, N. Y.

## TANKS, Storage, Steel

Allen Cone & Mch. Co., 120 Broadway, New York, N. Y.  
Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
American Locomotive Co., 30 Church St., New York, N. Y.  
The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y. 62

C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
F. D. Cummer & Sons Co., E. 17th St. & Euclid Ave., Cleveland 15, Ohio.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
J. F. Devine Mfg. Co., 909 Shawnee, Mt. Vernon, Ill.  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah  
The Heil Co., 3000 W. Montana St., Milwaukee 1, Wis.  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
Kennedy-Van Saun Mfg. & Eng. Corp., 2 Park Avenue Bldg., New York, N. Y. 10, 11  
Fred T. Kern Co., Box 2057, Milwaukee, Wis.  
The Klrk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati, Ohio  
Lancaster Iron Wks., Inc., 550 S. Prince St., Lancaster, Penn.  
McCartier Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.  
The R. C. Mahon Co., 231 S. La Salle St., Chicago 4, Ill.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
Noble Co., 1880 7th St., Oakland 7, Calif. 229  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Struthers Wells Corp., 1003 Pennsylvania Ave. W., Warren, Penn.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
The Wickes Boiler Co., 515 N. Washington Ave., Saginaw, Mich.  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

McCartier Iron Wks., Inc., Mill & Washington Sts., Norristown, Penn.  
The R. C. Mahon Co., 231 S. La Salle St., Chicago 4, Ill.  
Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
National Steel Products Co., 1611 Crystal Ave., Kansas City 3, Mo.  
Noble Co., 1880 7th St., Oakland 7, Calif. 229  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
Simplicity System Co., Riverside Drive, Chattanooga, Tenn.  
Southwestern Eng. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Standard Steel Corp., 5001 S. Boyle Ave., Los Angeles 11, Calif.  
Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
Struthers Wells Corp., 1003 Pennsylvania Ave. W., Warren, Penn.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
The Wickes Boiler Co., 515 N. Washington Ave., Saginaw, Mich.  
Wisconsin Foundry & Machine Co., 623 E. Main, Madison 1, Wis.

## TANKS, Storage, Wood

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover

## TANKS, Storage, Steel

Alpha Tank & Sheet Metal Mfg. Co., 5001 S. 38th St., St. Louis 16, Mo.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover

## TESTING LABORATORIES

(See Laboratories)

## TESTING EQUIPMENT

(Also See Laboratory Apparatus)

Burrell Technical Supply Co., 1936-1942 Fifth Ave., Pittsburgh 19, Penn.  
Denver Equipment Co., 1400 17th St., Denver 17, Colo. 31  
Fisher Scientific Co., 717 Forbes Street, Pittsburgh 19, Penn.  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
The Mines & Smelter Supply Co., Box 5270, Terminal Annex, Denver 17, Colo.  
Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.  
Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J. 244  
Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass. 39  
W. S. Tyler Co., 3615 Superior Ave., Cleveland 14, Ohio 231  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## THERMOCOUPLES, Pyrometers

(Also See Pyrometers)

Bristol Co., Waterbury 91, Conn.  
Brown Instrument Co., 4444 Wayne Ave., Philadelphia, Penn.  
Cambridge Instrument Co., Inc., 3732 Grand Central Terminal, New York 17, N. Y.  
Fisher Scientific Co., 717 Forbes Street, Pittsburgh 19, Penn.  
The Foxboro Co., Neponset Ave., Foxboro, Mass.  
General Electric Co., 1 River Rd., Schenectady, N. Y.  
J-B-T Instruments, Inc., 441 Chapel St., New Haven, Conn.  
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.  
C. J. Tagliabue Mfg. Co., Park Ave. & Rucks St., Brooklyn, N. Y.  
Simplicity System Co., Riverside Dr., Chattanooga 6, Tenn.  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Tammis Silica Co., 228 N. LaSalle St., Chicago 1, Ill.  
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## THICKENERS (See Slurry Thickeners)

## THIMBLES, Wire Rope

American Cable Div., American Chain & Cable Co., Wilkes-Barre, Penn. 3rd Cover  
American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 58  
Thomas Laughlin Co., 143 Fore St., Portland, Me. 2  
Macwhythe Co., 2940 14th Ave., Kenosha, Wis. 546  
Mine & Smelter Supply Co., 1422 17th St., Denver, Colo.  
John A. Roebling's Sons Co., 640 S. Broad, Trenton 2, N. J.  
U. S. Steel Supply Co., 1319 Wabansia Ave., Chicago, Ill.  
The Upson-Walton Co., Perry Payne Bldg., Cleveland, Ohio

## THIRD AXLES (See Motor Truck Drives & Differentials)

## TILE, Pipe MACHINES

(See Pipe Molds and Machines)

TIRES, Coolers, Dryers, Kilns  
Bethlehem Foundry & Machine Co., 225 W. 2nd St., Bethlehem, Penn.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Kennedy-Van Saun Mfg. & Eng. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
Lewistown Foundry & Machine Co., 16 Elizabeth, Lewistown, Penn.  
Madison Iron Wks., 5631 Bickett St., Huntington Park, Calif.  
F. L. Smidth & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129  
Stroh Process Steel Co., 1428 High St., Pittsburgh, Penn.  
Traylor Eng. & Mfg. Co., Allentown, Penn. 7  
Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. 8

## TIRES AND TUBES (Heavy-Duty Industrial)

The Dayton Rubber Mfg. Co., 2342 W. Riverview Ave., Dayton 1, Ohio  
Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio. 91  
Fiske Bros. Refining Co., 129 Lockwood St., Newark, N. J.  
Gates Rubber Co., 999 South Broadway, Denver 17, Colo. 44  
The General Tire & Rubber Co., Akron, Ohio  
The B. F. Goodrich Co., Akron, Ohio 5  
The Goodyear Tire & Rubber Co., 1144 E. Market, Akron, Ohio 9  
Seiberling Rubber Co., Akron, Ohio  
U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.

## TORCHES (Cutting & Welding)

(See Welding & Cutting Equipment)

## TOWERS, Structural Steel

American Bridge Co., Frick Bldg., Pittsburgh, Penn.  
American Steel Dredge Co., Inc., 2511 W. Taylor St., Ft. Wayne, Ind.  
Bethlehem Steel Co., Bethlehem, Penn. 22  
Blaw-Knox Co., Blawnox, Penn. 245  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
Fred T. Kern Co., Box 2057, Milwaukee, Wis.  
The R. C. Mahon Co., 231 S. LaSalle St., Chicago 4, Ill.  
Minneapolis - Moline Power Implement Co., Box 1050, Minneapolis, Minn.  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Penn.  
H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
Stearns-Roger Mfg. Co., 1718-22 California St., Denver 2, Colo.  
Superior Metal Prod. Co., Inc., 1819 S. Branson St., Marion, Ind.



# DIRECTORY

## TRACK AND TRACK EQUIPMENT

Bethlehem Steel Co., Bethlehem, Penn. 22  
The Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.  
Central Frog & Switch Co., Station O, Box 9, Cincinnati, Ohio  
Chase Fdry. & Mfg. Co., Columbus 7, Ohio  
Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
Easton Car & Construction Co., Box 270, Easton, Penn.  
L. B. Foster Co., P. O. Box 1647, Pittsburgh 30, Penn.  
Helmick Foundry-Machine Co., Lock Drawer 71, Fairmont, W. Va.  
Morse Machinery Co., 2900 Broadway, Denver 1, Colo.  
National Malleable & Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio  
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis. 34  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Petitbone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.  
Pressed Steel Car Co., Industrial Div., 2500 Koppers Bldg., Pittsburgh 30, Penn. 186  
Taylor-Wharton Iron & Steel Co., High Bridge, N. J. 25  
The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.

## TRACK SHIFTERS

The Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.  
Clyde Iron Works Inc., 29th Ave W. & Michigan St., Duluth 1, Minn.  
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 7, Wis. 34

## TRACTORS, Electric

Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Detroit Holst & Machine Co., 8201 Morrow Ave., Detroit 11, Mich.  
The Elwell Parker Elec. Co., 4205 St. Clair Ave., Cleveland, Ohio  
The Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## TRACTORS, Gasoline, Diesel

Allis-Chalmers Tractor Div., 1126 S. 70th St., Milwaukee, Wis. 24  
Caterpillar Tractor Co., Peoria 8, Ill.  
Clark Tractor Div. Clark Equipment Co., Battle Creek, Mich.  
Cleveland Tractor Co., 19300 Euclid Ave., Cleveland 17, Ohio  
Continental Motors Corp., Detroit, Mich.  
Four Wheel Drive Auto Co., Clintonville, Wis.  
The Hell Co., 3000 W. Montana St., Milwaukee 1, Wis.  
The Hug Co., 6th St., Highland, Ill.  
International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.

Mack Trucks, Inc., 250 Fifth Ave., New York 1, N. Y.  
Marmon-Herrington Co., 1511 W. Washington St., Indianapolis, Ind.  
Minneapolis-Moline Power Implement Co., Box 1050, Minneapolis 1, Minn.  
R. H. Sheppard Co., Philadelphia St., Hanover, Penn.  
Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio

## TRAILER BODIES (See Bodies)

## TRAILER BODIES, Bulk Cement

Butler Bin Co., Box 407, Waukesha, Wis. 54

## TRAILERS & SEMI-TRAILERS, Motor Truck

Athey Truss Wheel Co., 5631 W. 65th St., Chicago, Ill.  
Atlas Car & Mfg. Co., 1140 Ivanhoe Rd., Cleveland, Ohio  
Austin-Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
Dart Truck Co., 27th & Oak Sts., Kansas City, Mo.  
Easton Car & Construction Co., Box 270, Easton, Penn.  
Euclid Road Mch. Co., 1361 Chardon Rd., Cleveland, Ohio  
Ford Motor Co., Dearborn, Mich.  
Four Wheel Drive Auto Co., Clintonville, Wis.  
Fruehauf Trailer Co., 10940 Harper Ave., Detroit, Mich.  
Gar Wood Industries, Inc., 924 Riopelle St., Detroit, Mich.  
General Motors Truck Co., General Motors Bldg., Detroit, Mich.  
The Hell Co., 3000 W. Montana, Milwaukee, Wis.  
The Hug Co., 6th St., Highland, Ill.  
Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
Sanford-Day Iron Wks., Inc., Dale Ave., Knoxville, Tenn.  
Truck Engr. Corp., 1285 W. 70th St., Cleveland 2, Ohio  
Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y. 247

## TRAMWAYS, Aerial (See Aerial Tramways)

## TRANSFER PLANTS, Ready-Mixed Concrete

Blaw-Knox Co., Blawnox, Penn. 245  
Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234

## TRANSFORMERS, Electric (See Electrical Equipment)

## TRANSIT CONCRETE MIXING PLANTS (See also Batching Plants)

Blaw-Knox Co., Blawnox, Penn. 245  
Bodinson Mfg. Co., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Butler Bin Co., Box 407, Waukesha, Wis. 54  
Erie Steel Construction Co., 19th & Geist Rd., Erie, Penn.  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio

Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
Madsen Iron Wks., 5631 Bickett St., Huntington Park, Calif.

## TRANSMISSION MACHINERY (See Gears, Etc.)

## TRANSPORT SYSTEMS, Air (See Air Conveyors)

## TREADS, STAIR

Blaw-Knox Co., Blawnox, Penn. 245  
Boston Woven Hose & Rubber Co., 29 Hampshire St., Cambridge, Mass.  
Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
The B. F. Goodrich Co., Akron, Ohio 5  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235  
Kirk & Blum Mfg. Co., 3807 Spring Grove Ave., Cincinnati 25, Ohio  
Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn. 171  
Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, Ill. 169  
Southern Friction Materials Co., Box 1475, Charlotte 1, N. C.  
Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.  
U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.

## TRENCHING MACHINES

Barber-Greene Co., 631 W. Park Ave., Aurora, Ill. 175  
Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.  
Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio  
Bucyrus-Erie Co., P. O. Box 56, So. Milwaukee, Wis.  
The Byers Machine Co., Lock Box 390, Ravenna, Ohio  
Harnischfeger Corp., 4400 W. National, Milwaukee, Wis. 30  
Hyster Co., 2902 N.E. Clackamas St., Portland, Ore.  
Kensington Steel Co., 505 Kensington Ave., Chicago 28, Ill.  
Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn.  
The Osgood Co., Marion, Ohio.

## TRIPPERS, Belt (See Conveyor Belt Trippers)

## TROLLEYS, I-Beam

Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
Chisholm-Moore Holst Corp., Fremont Ave., Tonawanda, N. Y.  
The Cleveland Crane & Engr. Co., Wickliffe, Ohio.  
Coffing Holst Co., Danville, Ill.  
Curtis Pneumatic Machinery Co., 1988 Klenlen Ave., St. Louis, Mo.  
Ford Chain Block Div., American Chain & Cable Co., 2nd & Diamond Sts., Philadelphia 25, Penn.  
The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
Louden Mch. Co., 1119 Broadway, Fairfield, Iowa  
Southwestern Engr. Co., 4800 Santa Fe Ave., Los Angeles 11, Calif.  
Wright Mfg. Div., American Chain & Cable Co., York, Penn.

TROLLEYS, Mine  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## TROUGHS (See also Chutes)

Bodinson Mfg. Co., Inc., 2401 Bayshore Blvd., San Francisco 24, Calif.  
The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
Heltzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
Hendrick Mfg. Co., 39 Dundaff St., Carbondale, Penn. 235

## TRUCK BODIES (See Bodies)

## TRUCK BODIES, Concrete Mixing, Agitating (See also Bodies, Concrete Mixer Truck)

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. 223  
Commercial Concrete Equipment Co., 1 Wolf's Lane, Pelham 65, N. Y.  
Concrete Transport Mixer Co., Inc., 650 Rosedale Ave., St. Louis 12, Mo. 219  
Conserco, Inc., 1600 S. Capitol St., Washington 3, D. C.  
Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio 23  
Ransome Concrete Machinery Co., Dunellen, N. J.  
T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis. 185  
Spears-Wellis Mch. Co., Inc., 1832 W. 9th St., Oakland 7, Calif.

## TRUCKS, Dump (See Motor Trucks)

## TRUCKS, Electric

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.  
Clark Tractor Div., Clark Equipment Co., Battle Creek, Mich.  
Easton Car & Construction Co., Box 270, Easton, Penn.  
The Elwell Parker Elec. Co., 4205 St. Clair Ave., Cleveland, Ohio  
The Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## TRUCKS, Hand

Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.  
The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
The Erickson Special Equipment Co., 2631 Ulysses N. E., Minneapolis, Minn.  
Howe Scale Co., Rutland, Vt.  
A. Strelch & Bro. Co., 318 Eighth St., Oshkosh, Wis.  
The Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## TRUCKS, Industrial

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
Barrett-Cravens Co., 3255 W. 30th St., Chicago, Ill.  
Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
Clark Tractor Div., Clark Equipment Co., Battle Creek, Mich.  
The Chase Foundry & Mfg. Co., Columbus 7, Ohio  
Easton Car & Construction Co., Box 270, Easton, Penn.  
The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah

# DIRECTORY

The Elwell Parker Elec. Co.,  
4205 St. Clair Ave., Cleve-  
land, Ohio

Erickson Special Equipment  
Mfg. Co., 2631 Ulysses  
N.E., Minneapolis 13, Minn.

The Fate-Root-Heath Co.,  
607 Bell St., Plymouth,  
Ohio

Helmick Foundry - Machine  
Co., Lock Drawer 71, Fair-  
mont, W. Va.

Howe Scale Co., Rutland, Vt.  
Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.

International Engr. Inc., 1145  
Bolander, Dayton 1, Ohio

Lewis-Shepard Sales Corp.,  
117 Walnut St., Water-  
town, Mass.

Plymouth Locomotive Wks.,  
607 Riggs Ave., Plymouth,  
Ohio

Fulmoran Safety Equipment  
Corp., 176 Johnson St.,  
Brooklyn 1, N. Y.

A. Stretch & Bro. Co., 318  
Eighth St., Oshkosh, Wis.

Towmotor Corp., 1226 E.  
152nd St., Cleveland 10,  
Ohio

The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530  
Tacony St., Philadelphia  
24, Penn.

## TRUCKS, Lift

The Atlas Car & Mfg. Co.,  
1100 Ivanhoe Road, Cleve-  
land 10, Ohio

Barrett-Cravens Co., 3255 W.  
30th St., Chicago, Ill.

Clark Tractor Div. Clark  
Equipment Co., Battle  
Creek, Mich.

Easton Car & Construction  
Co., Box 270, Easton, Penn.

The Elwell-Parker Elec. Co.,  
4205 St. Clair Ave., Cleve-  
land, Ohio

Erickson Special Equipment  
Mfg. Co., 2631 Ulysses  
N.E., Minneapolis 13, Minn.

Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.

Multiplex Concrete Machy.  
Co., Elmore, Ohio

Stearns Mfg. Co., Inc., Ad-  
rian, Mich.

Towmotor Corp., 1226 E.  
152nd St., Cleveland 10,  
Ohio

The Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530  
Tacony Street, Philadel-  
phia 24, Penn.

## TRUCKS, Mixer Body (See Bodies, Concrete Mixer Truck)

## TRUCKS, Motor (See Motor Trucks)

## TRUCKS, Tractor

Chase Fdy. & Machine Co.,  
Columbus 7, Ohio

Dart Truck Co., 27th & Oak  
Sts., Kansas City, Mo.

The Elwell Parker Elec. Co.,  
4205 St. Clair Ave., Cleve-  
land, Ohio

The Euclid Road Machinery  
Co., 1361 Chardon Road,  
Cleveland, Ohio

Four Wheel Drive Auto Co.,  
Clintonville, Wis.

The Hug Co., 6th St., High-  
land, Ill.

Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.

Mack Trucks, Inc., 350 Fifth  
Ave., New York 1, N. Y.

Marmon-Herrington Co., Inc.,  
1511 W. Washington St.,  
Indianapolis, Ind.

Oshkosh Motor Truck, Inc.,  
2302 Oregon St., Oshkosh,  
Wis.

Sterling Motor Truck Co.,  
Inc., 2021 S. 54th St., Mil-  
waukee, Wis.

The Truckstell Co., 1672  
Union Commerce Bldg.,  
Cleveland, Ohio

Ward LaFrance Truck Div.,  
Great American Industries,  
Inc., Elmira, N. Y.

## TUBES, PYROMETER (See Pyrometers)

## TURBINES, Steam

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.

DeLaval Steam Turbine Co.,  
Trenton, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Joshua Hendy Iron Wks.,  
Box 37, Sunnyvale, Calif.

Morse Bros. Mchy. Co., 2900  
Broadway, Denver 1, Colo.

Worthington Pump & Mchy.  
Corp., 744 Broad St., New-  
ark 2, N. J.

## TURBINES, Water

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.

Dean Hill Pump Co., Ander-  
son, Ind.

DeLaval Steam Turbine Co.,  
Trenton, N. J.

Morse Bros. Mchy. Co., 2900  
Broadway, Denver 1, Colo.

Westinghouse Elec. & Mfg.  
Co., Hill St., E. Pitts-  
burgh, Penn.

## TURNBUCKLES

American Cable Division,  
American Chain & Cable  
Co., Inc., Wilkes-Barre,  
Penn.

Bethlehem Steel Co., Beth-  
lehem, Penn.

Electrolite Co., 4121 S. La-  
Salle St., Chicago, Ill.

Garlinghouse Bros., 2416 E.  
16th St., Los Angeles 21,  
Calif.

Hazard Wire Rope Division,  
American Chain & Cable  
Co., Inc., Wilkes-Barre,  
Penn.

Thomas Laughlin Co., 143  
Fore St., Portland, Me.

Lewistown Foundry & Ma-  
chine Co., 16 Elizabeth,  
Lewistown, Penn.

Macwhyte Co., 2949 14th  
Ave., Kenosha, Wis.

John A. Roebing's Sons Co.,  
540 S. Broad, Trenton 2,  
N. J.

Joseph T. Ryerson & Son,  
Inc., 16th & Rockwell Sts.,  
Chicago, Ill.

The Upson-Walton Co., Per-  
ry Payne Bldg., Cleveland,  
Ohio

## TURNTABLES, Track

The Atlas Car & Mfg. Co.,  
1100 Ivanhoe Road, Cleve-  
land 10, Ohio

Bethlehem Steel Co., Beth-  
lehem, Pa.

Blaw-Knox Co., Blawnox,  
Penn.

The Chase Foundry & Mfg.  
Co., Columbus 7, Ohio

L. B. Foster Co., P.O. Box  
1647, Pittsburgh 30, Penn.

Hardinge Co., Inc., 240 Arch  
St., York, Penn.

International Eng. Inc. 1145  
Bolander, Dayton, Ohio

Jackson & Church Co., 321  
N. Hamilton St., Saginaw,  
Mich.

Sanford-Day Iron Wks., Inc.,  
Dale Ave., Knoxville, Tenn.

Stearns Mfg. Co., Inc., Ad-  
rian, Mich.

Whiting Corp., 157th St. &  
Lathrop Ave., Harvey, Ill.

UNLOADERS, Boat

The Elmco Corp., P.O. Box  
300, Salt Lake City, Utah

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio

Lima Locomotive Wks., Inc.,  
Shovel & Crane Div., 1108  
National Bank Bldg., Lima,  
Ohio

Link-Belt Co., 300 W. Per-  
shing Rd., Chicago 9, Ill.

Robins Conveyors Inc., 270  
Passaic Ave., Passaic, N. J.

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.

Wellman Eng. Co., 7000 Cen-  
tral Ave., Cleveland 4, Ohio

Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

## UNLOADERS, Box Car

C. O. Bartlett & Snow Co.,  
6194 Harvard Ave., Cleve-  
land, Ohio

Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.

Butler Bin Co., Box 407,  
Waukesha, Wis.

Diamond Iron Works, Inc. &  
The Mahr Mfg. Co., Div.,  
1800 N. 2nd St., Minne-  
apolis 11, Minn.

The Elmco Corp., P.O. Box  
300 Salt Lake City, Utah

Fairfield Eng. Co., 305 Barn-  
hart St., Marion, Ohio

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

The Frank G. Hough Co.,  
E. Sunnyside Ave., Liber-  
tyville, Ill.

Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.

Jaeger Machine Co., 550 W.  
Spring St., Columbus 16,  
Ohio

C. S. Johnson, P.O. Box 71,  
Champaign, Ill.

Link-Belt Co., 2045 W. Hunt-  
ing Park Ave., Philadel-  
phia 40, Penn.

Noble Co., 1860 7th St., Oak-  
land 7, Calif.

Sprout, Waldron & Co.,  
Muncy, Penn.

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.

Webster Mfg., Inc., Tiffin,  
Ohio

Yale & Towne Mfg. Co.,  
Philadelphia Div., 4530 Ta-  
cony St., Philadelphia 24,  
Penn.

## UNLOADERS, Pneumatic

Dracco Corp., 4043 E. 116th  
St., Cleveland, Ohio

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

Hyster Co., 2902 N.E. Clack-  
amas St., Portland 8, Ore.

## VACUUM CLEANING SYSTEMS

Markley Dust Control Sys-  
tem, Inc., 431 Fayette Ave.,  
Mamaroneck, N. Y.

U. S. Hoffman Machinery  
Corp., 105 Fourth Ave.,  
New York 3, N. Y.

## VALVES, Air

The Babcock & Wilcox Co.,  
85 Liberty St., New York  
6, N. Y.

The Cleveland Rock Drill  
Co., 3781 E. 7th St., Cleve-  
land, Ohio

R. Conrader Co., 1200 French  
St., Erie 2, Penn.

Curtis Mfg. Co., 1988 Klen-  
len Ave., St. Louis 20, Mo.

Dixon Valve & Coupling  
Co., Hancock St. & Colum-  
bia Avenue, Philadelphia  
22, Penn.

Hills-McCanna Co., 3025 N.  
Western Ave., Chicago 19,  
Ill.

Jenkins Bros., 80 White St.,  
New York 13, N. Y.

Knox Mfg. Co., 811-823 Cher-  
ry Street, Philadelphia 7,  
Penn.

Merco Nordstrom Valve Co.,  
400 N. Lexington Ave.,  
Pittsburgh, Penn.

New Haven Vibrator Co.,  
Inc., Chestnut St., New  
Haven 7, Conn.

Reading-Pratt & Cady Div.,  
American Chain & Cable  
Co., Inc., Reading, Penn.

Sullivan Mchy. Co., Wood-  
land Ave., Michigan City,  
Ind.

Wheelco Instruments Co.,  
847 W. Harrison St., Chi-  
cago 7, Ill.

## VALVES, Automatic

The Babcock & Wilcox Co.,  
85 Liberty St., New York  
6, N. Y.

Bailey Meter Co., 1050 Ivan-  
hoe Rd., Cleveland, Ohio

Bristol Co., Waterbury 91,  
Conn.

The Foxboro Co., Neponset  
Ave., Foxboro, Mass.

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

Hills-McCanna Co., 3025 N.  
Western Ave., Chicago 18,  
Ill.

Noble Co., 1660 7th St., Oak-  
land 7, Calif.

Western Precipitation Corp.,  
1016 W. 9th St., Los An-  
geles 15, Calif.

Wheelco Instruments Co., 847  
W. Harrison St., Chicago  
7, Ill.

## VALVES, Bin

Earle C. Bacon, Inc., 17 John  
St., New York 17, N. Y.

Blaw-Knox Co., Blawnox,  
Penn.

Butler Bin Co., Box 407,  
Waukesha, Wis.

The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

Heitzel Steel Form & Iron  
Co., 1750 Thomas Rd., War-  
ren, Ohio

The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio

Link-Belt Co., 2410 W. 18th  
St., Chicago 8, Ill.

Noble Co., 1860 7th St., Oak-  
land 7, Calif.

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.

Webster Mfg., Inc., Tiffin,  
Ohio

## VALVES, Pulverized Material

The Babcock & Wilcox Co.,  
85 Liberty St., New York,  
N. Y.

Beaumont Birch Co., 1505  
Race St., Philadelphia 2,  
Penn.

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

The Mine & Smelter Supply  
Co., P. O. Box 5270, Termi-  
nal Annex, Denver 17, Colo.

Raymond Pulverizer Div.,  
Combustion Engr. Co., Inc.,  
1319 N. Branch St., Chi-  
cago, Ill.

C. M. Schaeffer Valve Co.,  
Allentown, Penn.

Stephens-Adamson Mfg. Co.,  
7 Ridgeway Ave., Aurora,  
Ill.

Western Precipitation Corp.,  
1016 W. 9th St., Los An-  
geles 15, Calif.

Whiting Corp., 157th St. &  
Lathrop Ave., Harvey, Ill.

## VALVES, Slurry

Electric Steel Fdy. Co., 2141  
N.W. 25th Ave., Portland  
10, Ore.

Fuller Co., Fuller Bldg.,  
Catauaqua, Penn.

Hills-McCanna Co., 3025 N.  
Western Ave., Chicago 15,  
Ill.

# DIRECTORY

Meckum Engr., Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Meroe Nordstrom Valve Co., 400 N. Lexington Ave., Pittsburgh, Penn.  
 Mine & Smelter Supply Co., Box 5270, Terminal Annex, Denver, Colo.  
 F. L. Smith & Co., 60 E. 42nd St., New York 17, N. Y. 128, 129

## VALVES, Water

The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio  
 Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia, Penn.  
 Electric Steel Fdy. Co., 2141 N. W. 25th Ave., Portland 10, Ore.  
 Hills-McKanna Co., 3025 N. Western Ave., Chicago 18, Ill.  
 Jenkins Bros., 80 White St., New York 13, N. Y.  
 Knox Mfg. Co., 811-823 Cherry Street, Philadelphia, Penn. 232  
 Manning, Maxwell & Moore Inc., 11 Elias St., Bridgeport 2, Conn.  
 Meroe Nordstrom Valve Co., 400 N. Lexington Ave., Pittsburgh, Penn.  
 Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
 Reading-Pratt & Cady Div., American Chain & Cable Co., Inc., Reading, Penn.  
 U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.  
 Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.  
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

## VENTILATING EQUIPMENT

American Air Filter Co. Inc., 215 Central Ave., Louisville, Ky.  
 American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.  
 American Fdry. & Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.  
 Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.  
 Clamage Fan Co., North & Porter Sts., Kalamazoo 16, Mich.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 The Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
 Macleod Co., 2232-40 Bogen St., Cincinnati, Ohio  
 D. J. Murray Mfg. Co., Wausau, Wis.

## VIBRATING SCREENS (See Screens, Vibrating)

VIBRATORS for Chutes, Bins, etc.  
 Ashland Vault Inc., 114 7th St., Ashland, Ohio  
 Cement Mill Equip. Co., 9713 Otsego Ave., Detroit, Mich.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn. 237  
 Separations Eng. Corp., 110 E. 42nd St., New York 17, N. Y.  
 Sutton, Steele & Steele, Inc., 1031 S. Haskell, Dallas 10, Texas  
 Syntrol Co., 450 Lexington Ave., Homer City, Penn.  
 The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231

## VIBRATORS, Concrete Block

Besser Mfg. Co., Alpena, Mich. 211  
 Multiplex Concrete Machinery Co., Elmore, Ohio. 217  
 New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn. 237  
 Stearns Mfg. Co., Inc., Adrian, Mich. 208  
 Syntrol Co., 450 Lexington Ave., Homer City, Penn.

## VIBRATORS, Portable, Concrete

Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. 40  
 Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 42  
 Kadco Corp., 36-40 Eleventh St., Long Island City, N. Y. (Subsidiary of Complete Machy. & Equipment Co.)  
 Mall Tool Co., 7728 S. Chicago Ave., Chicago, Ill.  
 New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn. 237  
 Stow Mfg. Co., Inc., 443 State St., Binghamton, N. Y.  
 Syntrol Co., 450 Lexington Ave., Homer City, Penn.

## VOLTMETERS

(See Electrical Instruments)

## WAGONS, Dump

Athey Truss Wheel Co., 5631 W. 63th St., Chicago, Ill.  
 Austin - Western Co., 601 Farnsworth Ave., Aurora, Ill. 53  
 Caterpillar Tractor Co., Peoria 8, Ill.  
 Chase Foundry & Mfg. Co., Columbus 7, Ohio  
 Euclid Road Machinery Co., 1361 Chardon Rd., Cleveland, Ohio  
 The Hell Co., 300 W. Montana, Milwaukee, Wis.  
 Insley Mfg. Co., 801 N. Olney, Indianapolis, Ind.  
 Koehring Co., 30th & Concordia Avenue, Milwaukee, Wis. 256  
 R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.  
 A. Streich & Bro. Co., 318 Eighth St., Oshkosh, Wis.  
 Trackcon Co., 3333 S. Chase Ave., Milwaukee 1, Wis. 27

## WALL FORMS & MACHINES, Concrete

Kirk & Blum Mfg. Co., 2807 Spring Grove Ave., Cincinnati 25, Ohio  
 Metal Forms Corp., 3334 N. Booth St., Milwaukee, Wis.

## WASH FOUNTAINS AND SHOWERS

Bradley Washfountain Co., 2203 N. Michigan St., Milwaukee, Wis.

## WASHING MACHINES, Sand, Gravel, Sticks (See Screens, Scrubbers)

## WATERPROOFING & DAMPROOFING, Concrete

American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio  
 The Goodyear Tire & Rubber Co., Inc., 144 E. Market, Akron, Ohio 9  
 Johns - Manville, 22 E. 40th St., New York 16, N. Y.  
 Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio

Sackrete Inc., Apple St. & Vandalla, Cincinnati, Ohio  
 Solway Sales Corp., 40 Rector St., New York 6, N. Y.  
 Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.  
 Tamms Silica Co., 228 N. La Salle St., Chicago, Ill.  
 Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.  
 U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.

## WEIGH LARRIES

The Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.  
 Butler Bin Co., Box 407, Waukesha, Wis. 54  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
 Continental Gin Co., Industrial Div., 4500 - 5th Ave., Birmingham, Ala. 233  
 Erie Steel Construction Co., 19th & Geist Rd., Erie, Penn. 204  
 Gifford - Wood Co., Hudson, N. Y.  
 Heitzel Steel Form & Iron Co., 1750 Thomas Rd., Warren, Ohio  
 Jackson & Church Co., 321 N. Hamilton St., Saginaw, Mich. 215  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 C. S. Johnson Co., P.O. Box 71, Champaign, Ill. 234  
 Kron Co., 1720 Fairfield Ave., Bridgeport 5, Conn.  
 Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill. 1  
 Richardson Scale Co., Clifton, N. J.  
 Stearns Mfg. Co., Inc., Adrian, Mich. 208  
 Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn. 8  
 Webster Mfg., Inc., Timin, Ohio  
 Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio 231  
 The Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## WEIGHING EQUIPMENT

Anchor Concrete Mch. Co., 1191 Fairview Ave., Columbus 8, Ohio. 218  
 Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Beaumont Birch Co., 1505 Race St., Philadelphia 2, Penn.  
 Blaw-Knox Co., Blawnox, Penn. 245  
 Bonded Scale Co., 128 Bellview, Columbus 7, Ohio  
 Butler Bin Co., Box 407, Waukesha, Wis. 54  
 Erie Steel Construction Co., 19th & Geist Rd., Erie, Penn. 204  
 Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
 Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
 Howe Scale Co., 127 Strongs Ave., Rutland, Vt.  
 The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio 51  
 Kennedy - Van Saun Mfg. & Engr. Co., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Kron Co., 1720 Fairfield Ave., Bridgeport 5, Conn.

Merrick Scale Mfg. Co., 180-186 Autumn St., Passaic, N. J. 241  
 Richardson Scale Co., Clifton, N. J.  
 Schaffer Poidometer Co., 2828 Smallman St., Pittsburgh, Penn.  
 Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J. 244  
 Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill. 6  
 Syntrol Co., 450 Lexington Ave., Homer City, Penn.  
 Toledo Scale Co., Telegraph Rd., Toledo 12, Ohio  
 Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## WEIGHT RECORDERS

Atlas Car & Mfg. Co., 1100 Ivanhoe Rd., Cleveland 10, Ohio  
 Bonded Scale Co., 128 Bellview, Columbus 7, Ohio  
 Builders - Providence Inc., Div. of Builders Iron Fdy., 9 Coddling St., Providence 1, R. I.  
 Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.  
 Hardinge Co., Inc., 240 Arch St., York, Penn. 225  
 C. S. Johnson Co., P. O. Box 71, Champaign, Ill. 234  
 Merrick Scale Mfg. Co., 180-186 Autumn St., Passaic, N. J. 241  
 Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J. 244  
 Yale & Towne Mfg. Co., Philadelphia Div., 4530 Tacony St., Philadelphia 24, Penn.

## WELDERS, PROTECTIVE EQUIPMENT

Boyer-Campbell Co., 6540 Antoine St., Detroit 2, Mich.  
 Davis Emergency Equipment Co., Inc., 45 Halleck St., Newark 4, N. J.  
 Firestone Tire & Rubber Co., 1200 Firestone Pkwy., Akron 17, Ohio  
 General Electric Co., 1 River Rd., Schenectady, N. Y.  
 The B. F. Goodrich Co., Akron, Ohio 8  
 Hobart Brothers Co., Hobart Square, Troy, Ohio  
 Lincoln Electric Co., 12618 Colt Rd., Cleveland 1, Ohio  
 Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.  
 U. S. Steel Supply Co., 1319 Wabansia Ave., Chicago, Ill.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.  
 Willson Products, Inc., 2nd & Washington Sts., Reading, Penn.

## WELDING CABLE

American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.  
 General Electric Co., 1 River Rd., Schenectady, N. Y.  
 Hobart Brothers Co., Hobart Square, Troy, Ohio  
 Lincoln Electric Co., 12618 Colt Rd., Cleveland 1, Ohio  
 Okonite Co., Passaic, N. J.  
 John A. Roebing's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 U. S. Rubber Co., 1260 6th Ave., New York 20, N. Y.  
 Westinghouse Electric & Mfg. Co., E. Pittsburgh, Penn.

## WELDING CARBON

Hobart Brothers Co., Hobart Square, Troy, Ohio



# DIRECTORY

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio  
National Carbon Co., Inc.,  
30 East 42nd St., New  
York 17, N. Y.

Wall-Colmonoy Corp., 720  
Fisher Bldg., Detroit 2,  
Mich.

## WELDING & CUTTING EQUIPMENT

Allan Mfg. & Welding Co.,  
728 Washington St., Buf-  
falo 3, N. Y.

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Haynes Stellite Co., Harrison  
& Lindsay Sts., Kokomo,  
Ind.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland, Ohio

Linde Air Prod. Co., 30 E.  
42nd St., New York, N. Y.

Alexander Milburn Co., 1425  
W. Baltimore St., Balti-  
more, Md.

U. S. Steel Supply Co., 1139  
Wabansia Ave., Chicago, Ill.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Glenn-Roberts Co., 1009  
Fruitvale, Oakland, Calif.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Marquette Mfg. Co., Minne-  
apolis, Minn.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

Allis-Chalmers Mfg. Co., 1945  
Prodroc St., Milwaukee 1,  
Wis.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Glenn-Roberts Co., 1009  
Fruitvale, Oakland, Calif.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Marquette Mfg. Co., Minne-  
apolis, Minn.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Glenn-Roberts Co., 1009  
Fruitvale, Oakland, Calif.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Marquette Mfg. Co., Minne-  
apolis, Minn.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Linde Air Prod. Co., 30 E.  
42nd St., New York, N. Y.

Manganese Steel Forge Co.,  
Richmond St. & Castor  
Ave., Philadelphia, Penn.

National Carbon Co., Inc., 30  
E. 42nd St., New York 17,  
N. Y.

Page Steel & Wire Div.,  
American Chain & Cable  
Co., Inc., Monessen, Penn.

Resisto-Loy Co., 127 Bayliss  
S.W., Grand Rapids, Mich.

Joseph T. Ryerson & Son.,  
16th & Rockwell Sts., Chi-  
cago, Ill.

Stoodt Co., 1134 W. Slauson  
St., Whittier, Calif.

Stulz-Sickles Co., 134 Lafay-  
ette St., Newark 5, N. J.

Taylor-Wharton Iron & Steel  
Co., High Bridge, N. J.

U. S. Steel Supply Co., 1319  
Wabansia Ave., Chicago, Ill.

Wall-Colmonoy Corp., 720  
Fisher Bldg., Detroit 2,  
Mich.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

The Alexander Milburn Co.,  
1425 W. Baltimore 23,  
Maryland

Turco Products Inc., 6135 S.  
Central Ave., Los Angeles  
1, Calif.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Glenn-Roberts Co., 1009  
Fruitvale, Oakland, Calif.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Marquette Mfg. Co., Minne-  
apolis, Minn.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

Glenn-Roberts Co., 1009  
Fruitvale, Oakland, Calif.

Harnischfeger Corp., 4400 W.  
National, Milwaukee, Wis.

Hobart Brothers Co., Hobart  
Square, Troy, Ohio

Lincoln Electric Co., 12818  
Colt Rd., Cleveland 1, Ohio

Marquette Mfg. Co., Minne-  
apolis, Minn.

Westinghouse Electric & Mfg.  
Co., East Pittsburgh, Penn.

Westinghouse Electric & Mfg.  
Co., Inc., 45 Halleck St.,  
Newark 4, N. J.

General Electric Co., 1 River  
Rd., Schenectady, N. Y.

## WET PANS, Grinding

The Bonnot Co., Mulberry  
Rd. S. E., Canton Ohio

Eagle Iron Works, 129 Hol-  
comb, Des Moines, Iowa. 205

International Engr., Inc.,  
1145 Bolander Ave., Day-  
ton 1, Ohio

Jackson & Church Co., 321  
N. Hamilton St., Saginaw,  
Mich. 215

Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.

W. A. Riddell Corp., Bucy-  
rus, Ohio

WHEELBARROWS  
Garlinghouse Bros., 2416 E.  
16th St., Los Angeles 21,  
Calif.

W. A. Riddell Corp., Bucy-  
rus, Ohio

WHEELS, ABRASIVE  
The Carborundum Co., Niag-  
ara Falls, N. Y.

Clipper Mfg. Co., 4030 Man-  
chester, St. Louis 10, Mo.

Independent Pneumatic Tool  
Co., 600 W. Jackson Blvd.,  
Chicago 6, Ill.

Manhattan Rubber Mfg. Div.  
of Raybestos - Manhattan  
Inc., 61 Willett St., Pas-  
saic, N. J. 13

U. S. Rubber Co., 1230 6th  
Ave., New York 20, N. Y.

WHEELS, Car  
American Locomotive Co., 30  
Church St., New York,  
N. Y.

American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201

The Atlas Car & Mfg. Co.,  
1100 Ivanhoe Rd., Cleve-  
land 10, Ohio

Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244

Bethlehem Steel Co., Beth-  
lehem, Penn. 22

Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.

C. S. Card Iron Works Co.,  
2501 W. 16th Ave., Denver,  
Colo.

Carnegie-Illinois Steel Corp.,  
Carnegie Bldg., Pittsburgh  
30, Penn.

The Chase Foundry & Mfg.  
Co., Columbus 7, Ohio

Dobble Foundry & Machine  
Co., 146-170 Portage Rd.,  
Niagara Falls, N. Y.

Eagle Iron Works, 129 Hol-  
comb Ave., Des Moines,  
Iowa 205

Enterprise Engine & Fdy.  
Co., 18th & Florida Sts.,  
Francisco 10, Calif.

Farrell-Cheek Steel Co., P.O.  
Box 721, Sandusky, Ohio

Frog, Switch & Mfg. Co.,  
Carlisle, Penn. 243

Helmeck Foundry - Machine  
Co., Lock Drawer 71, Fair-  
mont, W. Va.

Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.

Kent Machine Co., Cuyahoga  
Falls, Ohio. 219

Link-Belt Co., 300 W. Per-  
shire Rd., Chicago 9, Ill.

McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45

Madsen Iron Works, 5631  
Bickett St., Huntington  
Park, Calif.

The Medart Co., 100 Potomac  
St., St. Louis 18, Mo.

D. J. Murray Mfg. Co., Wau-  
sau, Wis.

National Malleable and Steel  
Castings Co., 10800 Quincy  
Ave., Cleveland, Ohio

Ottumwa Iron Wks., Ot-  
tumwa, Iowa

Pettibone Mulliken Corp.,  
4710 W. Division St., Chi-  
cago 51, Ill.

H. K. Porter Co., Inc., 1932  
Oliver Bldg., Pittsburgh,  
Penn. 2nd Cover

Pressed Steel Car Co. Indus-  
trial Div., 402 W. Main  
St., 2500 Koppers Bldg.,  
Pittsburgh 30, Penn. 202

Rogers Iron Wks., 11th &  
Pearl, Joplin, Mo. 200

Sanford-Day Iron Works,  
Inc., Dale Ave., Knoxville,  
Tenn.

Taylor-Wharton Iron and  
Steel Co., High Bridge,  
N. J. 16

Watt Car & Wheel Co.,  
Barnesville, Ohio

WHEELS, Crane  
American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201

Bethlehem Steel Co., Beth-  
lehem, Penn. 22

Carnegie-Illinois Steel Corp.,  
Carnegie Bldg., Pittsburgh  
30, Penn.

The Cleveland Crane & Eng.  
Co., Wickliffe, Ohio

Dobble Foundry & Machine  
Co., 146-170 Portage Rd.,  
Niagara Falls, N. Y.

Electric Steel Foundry Co.,  
2141 N.W. 25th Ave., Port-  
land 10, Oregon

Farrell-Cheek Steel Co., P.O.  
Box 721, Sandusky, Ohio

Frog, Switch & Mfg. Co.,  
Carlisle, Penn. 243

Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.

National Steel Prod. Co.,  
1611 Crystal Ave., Kansas  
City 3, Mo.

Stroh Process Steel Co., 1428  
High Rd., Pittsburgh, Penn.

Taylor-Wharton Iron & Steel  
Co., High Bridge, N. J. 16

WHEELS, Sprocket  
Allied Steel Products, Inc.,  
1721 N.E.C. Bldg., Cleve-  
land 14, Ohio

American Manganese Steel  
Div. of American Brake  
Shoe Co., 389 E. 14th St.,  
Chicago Heights, Ill. 201

Earle C. Bacon, Inc., 17 John  
St., New York 7, N. Y. 244

Bodinson Mfg. Co., Inc., 2401  
Bayshore Blvd., San Fran-  
cisco 24, Calif.

Chain Belt Co., 1600 W. Bruce  
St., Milwaukee 4, Wis. 223

Continental Gin Co., Indus-  
trial Div., 4800 5th Ave.,  
Birmingham, Ala. 233

The Conveyor Co., Inc., 3260  
E. Slauson Ave., Los An-  
geles 11, Calif.

Farrell-Cheek Steel Co., P.O.  
Box 721, Sandusky, Ohio

Frog, Switch & Mfg. Co.,  
Carlisle, Penn. 243

Industrial Gear Mfg. Co.,  
4544 W. Van Buren St.,  
Chicago 24, Ill. 227

The Jeffrey Mfg. Co., 935-99  
N. 4th St., Columbus 16,  
Ohio 51

Kensington Steel Co., 505  
Kensington Ave., Chicago  
28, Ill.

Kent Machine Co., Cuyahoga  
Falls, Ohio. 219

Link-Belt Co., 300 W. Per-  
shire Ave., Indianapolis 6,  
Ind. 1

McLanahan & Stone Corp.,  
200 Wall St., Hollidays-  
burg, Penn. 45

Maddox Fdy. & Machine  
Wks., Archer, Florida

Madsen Iron Wks., 5631  
Bickett St., Huntington  
Park, Calif.

The Medart Co., 100 Poto-  
mac St., St. Louis 18, Mo.

Morrow Mfg. Co., 722 E. 10th  
St., Wellston, Ohio

D. J. Murray Mfg. Co.,  
Wausau, Wis.

Pettibone Mulliken Corp.,  
4710 W. Division St., Chi-  
cago 51, Ill.

# DIRECTORY

Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
 Stroth Process Steel Co., 1428 High St., Pittsburgh, Penn.  
 Taylor-Wharton Iron & Steel Co., High Bridge, Newark, N. J. 16  
 Webster Mfg., Inc., Tiffin, Ohio  
 Wisconsin Fdry. & Mach. Co., 623 East Main, Madison 1, Wis.

## WHEELS (Tracklaying Type)

Allied Steel Products, Inc., 1721 N.B.C. Bldg., Cleveland 14, Ohio  
 Athey Truss Wheel Co., 5631 W. 85th St., Chicago 38, Ill.  
 The Buda Co., 15401 Commercial Ave., Harvey, Ill. 33  
 Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.

## WHIRLEYS

American Holist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
 Clyde Iron Works Inc., 29th Ave. W. & Michigan St., Duluth 1, Minn.  
 Dravo Corp., Neville Island, Pittsburgh 25, Penn.  
 Fred T. Kern Co., Box 2057, Milwaukee, Wis.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio

## WINCHES

(See also Capstans)

Alloy & Steel Metals Co., 1862 E. 55th St., Los Angeles, Calif.  
 American Holist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
 C. O. Bartlett & Snow Co., 6194 Harvard Ave., Cleveland, Ohio  
 Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis. 223  
 Clyde Iron Works, Inc., 29th Ave. W. & Michigan St., Duluth 1, Minn.  
 Continental Gin Co., Industrial Div., 4500 5th Ave., Birmingham, Ala. 233  
 Detroit Holist & Machine Co., 8201 Morrow Ave., Detroit 11, Mich.  
 Diamond Iron Works Inc., and The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn. 247  
 Dobbie Foundry & Machine Co., 146-170 Portage Road, Niagara Falls, N. Y.  
 Electro Lift, Inc., 30 Church St., New York 7, N. Y.  
 Fridy Holist & Mch. Co., Mountville, Penn.  
 Gar Wood Industries, Inc., 7924 Ripelle St., Detroit 11, Mich.  
 The Heli Co., 3000 W. Montana St., Milwaukee 1, Wis.  
 Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio  
 Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill. 1  
 McKiernan-Terry Corp., 15 Park Row, New York 7, N. Y.  
 Morrow Mfg. Co., 722 E. 10th St., Wellston, Ohio  
 Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.  
 Novo Engine Co., 702 Porter St., Lansing, Mich.  
 O. K. Clutch & Mch. Co., Florence Street, Columbia, Penn.  
 Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
 H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn. 2nd Cover  
 W. A. Riddell Corp., Bucyrus, Ohio  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N.J.

The Sasgen Derrick Co., 3101-27 W. Grand Ave., Chicago 22, Ill.  
 Six Wheels Inc., 1559-1584 E. 20th St., Los Angeles 11, Calif.  
 Stearns-Rogers Mfg. Co., 1718-22 California St., Denver 2, Colo.  
 Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.  
 Truck Eng. Corp., 1285 W. 70th St., Cleveland, Ohio  
 Vulcan Iron Works, 730 S. Main Street, Wilkes-Barre, Penn.  
 Webster Mfg., Inc., Tiffin, Ohio

## WIRE & CABLE, Electrical

Aluminum Co. of America, 801 Gulf Bldg., Pittsburgh 19, Penn.  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.  
 General Electric Co., 1 River Rd., Schenectady, N. Y.  
 Okonite Co., Passaic, N. J.  
 Rogers Iron Works Co., 11th & Pearl, Joplin, Mo. 200  
 John A. Roebbling's Sons Co., 640 E. Broad, Trenton 2, N. J.  
 Simplex Wire & Cable Co., 79 Sidney St., Cambridge, Mass.  
 U. S. Rubber Co., 1230 6th Ave., New York 20, N. Y.  
 Westinghouse Elec. & Mfg. Co., Hill St., E. Pittsburgh, Penn.

## WIRE CLOTH

Audubon Wire Cloth Corp., (Subsidiary of Manganese Steel Forge Co.), Richmond St. & Castor Ave., Philadelphia, Penn.  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Buffalo Wire Works Co., 308-332 Terrace, Buffalo, N. Y.  
 The California Wire Cloth Corp., 1001 22nd Ave., Oakland, Calif.  
 Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio  
 Colorado Fuel & Iron Corp., P. O. Box 1920, Denver 1, Colo.  
 The Conveyor Co., Inc., 3260 E. Slauson Ave., Los Angeles 11, Calif.  
 Cyclone Fence Div., American Steel & Wire Co., Waukegan, Ill.  
 HarriSteel Products Co., 420 Lexington Ave., New York 17, N. Y.  
 Iowa Mfg. Co., 916 16th St., N.E., Cedar Rapids, Iowa. 166  
 Kennedy-Van Saun Mfg. & Eng. Corp., 2 Park Ave. Bldg., New York, N. Y. 10, 11  
 Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis, Mo. 52  
 Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.  
 Michigan Wire Cloth Co., 2108 Howard St., Detroit, Mich.  
 National Wire Cloth Co., 252 W. Fairfield Ave., St. Paul, Minn.  
 Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.  
 Oliver United Filters, Inc., 23 W. 42nd St., New York 18, N. Y.  
 Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.  
 John A. Roebbling's Sons Co., 640 S. Broad St., Trenton, N. J.  
 Twin City Iron & Wire Co., 23 W. Water St., St. Paul, Minn.

The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio 231  
 U. S. Steel Supply Co., 1319 Wabansia Ave., Chicago, Ill.  
 Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

## WIRE ROPE

Allied Steel Products Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio  
 American Cable Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 3rd Cover  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Earle C. Bacon, Inc., 17 John St., New York 7, N. Y. 244  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
 Electroline Co., 4121 S. La Salle St., Chicago, Ill.  
 Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 58  
 Jones & Laughlin Steel Corp., 3rd & Ross Sts., Pittsburgh 30, Penn.  
 A. Leschen & Sons Rope Co., 5908 Kennerly Ave., St. Louis, Mo. 221  
 R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.  
 MacWhyte Co., 2949 14th Ave., Kenosha, Wis. 246  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 John A. Roebbling's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 Sullivan Mch. Co., Woodland Ave., Michigan City, Ind.  
 Union Wire Rope Corp., 21st & Manchester, Kansas City, Mo.  
 The Upson-Walton Co., Perry Payne Bldg., Cleveland, Ohio  
 Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

## WIRE ROPE FITTINGS, Clamps, Clips, Hooks, Sockets

American Cable Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 3rd Cover  
 American Holist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.  
 Chicago Steel Fdry. Co., 3720 S. Kedzie Ave., Chicago, Ill.  
 Columbia Steel Co., Russ Bldg., San Francisco 6, Calif.  
 Electric Steel Foundry Co., 2141 N.W. 25th Ave., Portland 10, Oregon  
 Electroline Co., 4121 S. La Salle St., Chicago, Ill.  
 Garlinghouse Bros., 2416 E. 16th St., Los Angeles 21, Calif.  
 Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 58  
 Jones & Laughlin Steel Corp., Gilmore Wire Rope Div., Muncy, Penn.  
 Thomas Laughlin Co., 143 Fore St., Portland, Me. 2

A. Leschen & Sons Rope Co., 5908 Kennerly Ave., St. Louis, Mo. 221  
 MacWhyte Co., 2949 14th Ave., Kenosha, Wis. 246  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 National Production Co., 4561 St. Jean Ave., Detroit, Mich.  
 Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
 John A. Roebbling's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 Sauerman Bros., Inc., 530 S. Clinton St., Chicago, Ill. 230  
 Union Wire Rope Corp., 21st & Manchester, Kansas City, Mo.  
 U. S. Steel Supply Co., 1319 Wabansia Ave., Chicago, Ill.  
 The Upson-Walton Co., Perry Payne Bldg., Cleveland, Ohio  
 Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

## WIRE ROPE, Slings

American Cable Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 3rd Cover  
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 Bethlehem Steel Co., Bethlehem, Penn. 22  
 Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.  
 Electric Steel Fdy. Co., 2141 N.W. 25th Ave., Portland 10, Ore.  
 Electroline Co., 4121 S. La Salle St., Chicago, Ill.  
 Hazard Wire Rope Div., American Chain & Cable Co., Inc., Wilkes-Barre, Penn. 58  
 Jones & Laughlin Steel Corp., 3rd & Ross Sts., Pittsburgh 30, Penn.  
 A. Leschen & Sons Rope Co., 5908 Kennerly Ave., St. Louis, Mo. 221  
 MacWhyte Co., 2949 14th Ave., Kenosha, Wis. 246  
 Meckum Eng. Inc., 53 W. Jackson Blvd., Chicago 4, Ill.  
 Pacific Car & Fdy. Co., 4th & Factory St., Renton, Wash.  
 John A. Roebbling's Sons Co., 640 S. Broad, Trenton 2, N. J.  
 Sauerman Bros., Inc., 530 S. Clinton St., Chicago, Ill. 230  
 Union Wire Rope Corp., 21st & Manchester, Kansas City, Mo.  
 The Upson-Walton Co., Perry Payne Bldg., Cleveland, Ohio

## WIRE ROPE DRESSING COMPOUNDS

American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio  
 A. Leschen & Sons Rope Co., 5908 Kennerly Ave., St. Louis 12, Mo. 221  
 New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, N. Y.  
 John A. Roebbling's Sons Co., 640 S. Broad St., Trenton 2, N. J.  
 Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.

## WIRE, Welding (See Welding Rods, Electrodes)

# TRADE NAMES of Manufacturers' Equipment.. 1945

**A**  
Abraso Screens—John A. Roeb-  
ling's Sons Co., 640 S. Broad  
St., Trenton 2, N. J.

Abrasoweld Arc Welding Electro-  
de—Lincoln Electric Co.,  
12818 Colt Rd., Cleveland 1,  
Ohio

A-C Engines, Tractors—Allis-  
Chalmers Tractor Division, 1126  
S. 70th St., Milwaukee, Wis.

A-C Tractors & Tractor Engines,  
Graders & Scrapers—Allis-  
Chalmers Manufacturing Co.,  
1945 Prodroc St., Milwaukee,  
Wis.

Accordion Fold Detonator Pack-  
age—Atlas Powder Co., Dela-  
ware Trust Bldg., Wilmington  
99, Del.

Adamant Tin Base Babbitt—  
Magnolia Metal Co., 15 W. Jer-  
sey St., Elizabeth 4, N. J.

Adamantine Alloy Steel Castings—  
The Babcock & Wilcox Co.,  
85 Liberty St., New York 6,  
N. Y.

Advance Blast Hole, Prospecting,  
Well Drilling & Boring Ma-  
chinery—The Loomis Machine  
Co., 15 E. Market St., Tiffin,  
Ohio

Aero Seal Synthetic Rubber Parts  
—Chicago Belting Co., 113 N.  
Green St., Chicago 7, Ill.

Aero-Vibe Vibrating Screens—  
Allis-Chalmers Manufacturing  
Co., 1945 Prodroc St., Milwau-  
kee, Wis.

Aggremeters Weigh Hoppers—  
Erie Steel Construction Co.,  
19th & Geist Rd., Erie, Penn.

Agitair Flotation Machines—The  
Galigher Co., 48 S. 2nd East  
St., Salt Lake City 1, Utah.

Air Cushion Air Compressors &  
Centrifugal Pumps—Pennsyl-  
vania Pump & Compressor Co.,  
Easton, Penn.

Air King Air Hose Couplings—  
Dixon Valve & Coupling Co.,  
Hancock St. & Columbia Ave.,  
Philadelphia, Penn.

Air Kooled Worm Gear Speed  
Reducers—Philadelphia Gear  
Works, Inc., Erie Ave. & G  
St., Philadelphia 34, Penn.

Airflex Couplings—The Falk  
Corp., 3001 W. Canal, Milwau-  
kee 8, Wis.

Airline Lubrigras Airmotor Oper-  
ated Lubricant Pumps—Lin-  
coln Engineering Co., 5701 Na-  
tural Bridge, St. Louis 20, Mo.

Airmat Air Filter—American Air  
Filter Co., Inc., 215 Central  
Ave., Louisville 7, Ky.

Air-Plus Compressors—Jaeger  
Machine Co., 550 W. Spring  
St., Columbus 16, Ohio

Airveyor Conveying Systems—  
Fuller Co., Fuller Bldg., Cata-  
squa, Penn.

Ajax Flexible Couplings—Ajax  
Flexible Coupling Co., 2 Eng-  
lish St., Westfield, N. Y.

Ajax Hose (Air Drill, Water,  
Steam)—Hewitt Rubber Corp.,  
240 Kensington Ave., Buffalo 5,  
N. Y.

Akins Classifiers—Colorado Iron  
Works Co., 1824 17th St., Den-  
ver 2, Colo.

Alamo Refractory Brick—Harbi-  
son-Walker Refractories Co.,  
Farmers Bank Bldg., Pitts-  
burgh 22, Penn.

Albany Sand Slinger for Loading  
Box Cars—Link-Belt Co., 2045  
West Hunting Park Ave., Phila-  
delphia 40, Penn.

Alcaid Lubricating Oil—The  
Texas Co., 135 East 42nd St.,  
New York 17, N. Y.

Alco Diesel Engines, Heat Ex-  
changers, Locomotives—Ameri-  
can Locomotive Co., 30 Church  
St., New York 7, N. Y.

Algot Lubricating Oil—The Texas  
Co., East 42nd St., New York  
17, N. Y.

Allcasteel Sheaves—Vulcan Iron  
Works, 730 S. Main St., Wilkes-  
Barre, Penn.

Allgood Cord Air Hose—Goodall  
Rubber Co., Inc., 5 So. 36th St.,  
Philadelphia 4, Penn.

Alligator Belt Cutters, Steel Belt  
Lacing, V-Belt Fasteners—  
Flexible Steel Lacing Co., 4607-  
31 Lexington St., Chicago 44,  
Ill.

Alumex Klin Liners—Mexico Re-  
fractories Co., Cole & Love  
Sts., Mexico, Mo.

Alusite High-Alumina Refractory  
Brick—Harbison-Walker Re-  
fractories Co., Farmers Bank  
Bldg., Pittsburgh 22, Penn.

Alton Dynamite, Black & Pellet  
Powder—Equitable Powder  
Mfg. Co., East Alton, Ill.

Amerclad Electric Wire & Cables,  
Welding Cables—American  
Steel & Wire Co., Rockefeller  
Bldg., Cleveland 13, Ohio

American Air Separators—Kent  
Mill Co., 10 Rapalye St., Brook-  
lyn 31, N. Y.

American Blasting Caps, Blast-  
ing Powder, Dynamite—Ameri-  
can Cyanamid & Chemical  
Corp., Explosives Dept., 30  
Rockefeller Plaza, New York  
20, N. Y.

American Disc Type Filters, Con-  
tinuous Vacuum—Oliver United  
Filters, Inc., 33 W. 42nd St.,  
New York 18, N. Y.

American Fence & Cables (Elec-  
trical), Reinforcement, Tram-  
ways—American Steel & Wire  
Co., Rockefeller Bldg., Cleve-  
land 13, Ohio

American Flexible Couplings—  
J. A. Zurn Mfg. Co., 1801 Pitts-  
burgh Ave., Erie, Penn.

American Hammermills, Ring  
Crushers and Shredders—Amer-  
ican Pulverizer Co., 1249 Mack-  
lind Ave., St. Louis 10, Mo.

American Hoisting Machinery—  
American Hoist & Derrick Co.,  
63 S. Robert St., St. Paul 1,  
Minn.

American Industrial Thermome-  
ters & Control Instruments—  
Manning, Maxwell & Moore,  
Inc., 11 Elias St., Bridgeport  
2, Conn.

American Pumps—The American  
Well Works, 100 North Broad-  
way, Aurora, Ill.

American Revolver Gantry  
Cranes—American Hoist &  
Derrick Co., 63 S. Robert St.,  
St. Paul 1, Minn.

Amodyn Explosives—Atlas Pow-  
der Co., Delaware Trust Bldg.,  
Wilmington 99, Del.

Ampac Arc Welders—Allis-Chal-  
mers Manufacturing Co., 1944  
Prodroc St., Milwaukee, Wis.

Ampere Canvas Stitched Belting  
—Victor Balata & Textile Belting  
Co., 53 Park Pl., New York  
7, N. Y.

Ampliset Free-Vane Air-Oper-  
ated Controller—The Bristol  
Company, Waterbury 91, Conn.

Amsco Dredge Pumps—American  
Manganese Steel Division of  
American Brake Shoe Co., 389  
E. 14th St., Chicago Heights,  
Ill.

Amsco Pan Feeder—Stephens-  
Adamson Mfg. Co., 7 Ridgeway  
Ave., Aurora, Ill.

Anaconda All Products—The  
American Brass Co., 414  
Meadow, Waterbury 88, Conn.

Anaconda Crushing Rolls—Allis-  
Chalmers Manufacturing Co.,  
1945 Prodroc St., Milwaukee,  
Wis.

Anchor High-Alumina Refractory  
Brick—Harbison-Walker Re-  
fractories Co., Farmers Bank  
Bldg., Pittsburgh 22, Penn.

Anglegraders Angledozer—Track-  
son Co., 3333 S. Chase Ave.,  
Milwaukee 1, Wis.

Anthony Hydraulic Dump Bodies  
and Hoists, Platform Hoists—  
Anthony Co., Inc., Streator,  
Ill.

Anti-Friction Belt Conveyor  
Idlers—Link-Belt Co., 300 West  
Pershing Road, Chicago 9, Ill.

Apex Explosives—Atlas Powder  
Co., Delaware Trust Bldg.,  
Wilmington 99, Del.

Apex Super Duty Deaired Klin  
Liner—Walsh Refractories  
Corp., 4070 N. First St., St.  
Louis 7, Mo.

Arch-Crimp Wire Screen or Cloth  
—Ludlow-Saylor Wire Co., 634  
S. Newstead Ave., St. Louis,  
Mo.

Arco Klin Liners—General Re-  
fractories Co., 1600 Real Estate  
Trust Bldg., Philadelphia,  
Penn.

Arco-70 Klin Liners—General Re-  
fractories Co., 1600 Real Estate  
Trust Bldg., Philadelphia,  
Penn.

Armco Spiral Welded Dredge  
Pipe, Pontoon Pipe, etc.,  
American Rolling Mill Co.,  
Middletown, Ohio.

Armorite Underground Cables—  
The Okonite Co., Passaic, N. J.

Arno Air Hose, Steam Hose—Cin-  
cinnati Rubber Mfg. Co.,  
Franklin Ave. & Norwood Sta-  
tion, Cincinnati 12, Ohio

Artic Greases—Standard Oil Co.  
of California, 225 Bush St., San  
Francisco 20, Calif.

Asbestos Cord Steam Hose—The  
Goodyear Tire & Rubber Co.,  
Inc., 1144 E. Market, Akron,  
Ohio.

Ashcroft Gauges—Manning, Max-  
well & Moore, Inc., 11 Elias  
St., Bridgeport 2, Conn.

Athey Track-Laying Type Wheels,  
Trailers & Wagons, Tractor  
Shovels, Truck Loaders—Athey  
Truss Wheel Co., 5631 W. 65th  
St., Chicago 38, Ill.

Atlantic Hose, Packing—Quaker  
Rubber Corp., Comly & Milnor  
Sts., Philadelphia 24, Penn.

Atlas Chains—The Jeffrey Mfg.  
Co., 935-99 N. 4th St., Colum-  
bus 16, Ohio

Atlas Explosives & Blasting Sup-  
plies—Atlas Powder Co., Dela-  
ware Trust Bldg., Wilmington  
99, Del.

Atlas Imperial Diesel Engines &  
Diesel-Electric Generator Sets  
—Atlas Imperial Diesel Engine  
Co., 102 New Montgomery St.,  
San Francisco 5, Calif.

Atlas Industrial Haulage Equip-  
ment—The Atlas Car & Manu-  
facturing Co., 1100 Ivanhoe  
Rd., Cleveland 10, Ohio.

Atlas Polar Diesel Engines—Bo-  
linder's Co., Inc., 33 Rector,  
New York 6, N. Y.

Atox Allswepit Grinding Mills—  
F. L. Smidth & Co., 60 East  
42nd St., New York 17, N. Y.

Austin-Western Cars, Conveyors,  
Cranes, Crushers, Crushing and  
Screening Plants, Draglines,  
Shovels—Austin-Western Co.,  
601 Farnsworth Ave., Aurora,  
Ill.

Auto-Raise Thickeners—Hardinge  
Co., 240 Arch St., York, Penn.

Autoset Free-Vane Air-Operated  
Controller—The Bristol Com-  
pany, Waterbury 91, Conn.

Artex High Heat Fire Brick—  
Mexico Refractories Co., Cole  
& Love Sts., Mexico, Mo.

## B

Baby Tandem Crushing Plant—  
Iowa Mfg. Co., 916 16th St.,  
N. E., Cedar Rapids, Iowa.

Badger Bins, Jaw Crushers, Roll  
Crushers, Portable Aggregates  
Plants—Wisconsin Foundry &  
Machine Co., 623 E. Main,  
Madison 1, Wis.

Bagpaker Bag Filling & Closing  
Machines—Bagpak, Inc., 220 E.  
42nd St., New York 17, N. Y.

Balanced Rolls, Crushing Rolls—  
Sturtevant Mill Co., 103 Clay-  
ton St., Dorchester, Boston 22,  
Mass.

Band-It Industrial Pressure  
Clamps for Hose, Pipe, Tanks,  
etc.—Band-It Co., 2536 Walnut  
St., Denver 5, Colo.

Bay City Crawler Shovels &  
Cranes—Bay City Shovels, Inc.,  
2611 Center Ave., Bay City,  
Mich.

Beco Shovel & Dragline Acces-  
sories—Bucyrus-Erie Co., P.O.  
Box 56, South Milwaukee, Wis.

Bemis Bag Closing Thread—Be-  
mis Bros. Bag Co., 410 Poplar  
St., St. Louis 2, Mo.

Berg Method of Entombment  
Concrete Vaults—Berg Vault  
Co., Equipment Division, 1920  
Lucas Hunt Blvd., St. Louis,  
Mo.

Betterbags Paper Bags—Ham-  
mond Bag & Paper Co., 18th  
& Charles Sts., Wellsburg, W.  
Va.

Better-Built Locomotives—H. K.  
Porter Co., Inc., 1932 Oliver  
Bldg., Pittsburgh, Penn.

B-G All Equipment—Barber-  
Greene Co., 631 W. Park Ave.,  
Aurora, Ill.

Biglist Shovels, Spades, Scoops—  
Wood Shovel & Tool Co., Rose-  
velt & Clark Sts., Piqua, Ohio.

Bin-Dicator Bin Level Indicators  
—The Bin-Dicator Co., 14615  
E. Jefferson Ave., Detroit 15,  
Mich.

Bird Centrifuges, Classifiers, Fil-  
ters—Bird Machine Co., So.  
Walpole, Mass.

Birdsboro-Buchanan Crushers—  
Birdsboro Steel Foundry &  
Machine Co., 1941 Furnace St.,  
Birdsboro, Penn.

B-Linator Pyrometer Controllers  
—Bristol Co., Waterbury 91,  
Conn.

Bio-Matic Coal Stokers—The Her-  
born Engr. & Mfg. Co., Box  
666, Sandusky, Ohio.

Blue Streak Mills, Pulverizers—  
Prater Pulverizer Co., 1825 S.  
55th Ave., Chicago, Ill.

Bolinder's Diesel Engines—Bo-  
linder's Co., Inc., 33 Rector,  
New York 6, N. Y.

Bolivian Water Hose—Cincinnati  
Rubber Mfg. Co., Franklin Ave.  
& Norwood Station, Cincinnati  
12, Ohio.

Bonded Conveyors, Crushers,  
Scales, Screens—Bonded Scale  
Co., 128 Bellview, Columbus 7,  
Ohio.

Boone Refractory Brick—Harbi-  
son-Walker Refractories Co.,  
1800 Farmers Bank Bldg., Pitts-  
burgh 22, Penn.

Bored Hard Facing Alloy—  
Stoddy Co., 1134 W. Slauson  
St., Whittier, Calif.



Boss Air Valves, Hose Couplings—Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia, Penn.

Bradley Grinding Mills—Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn.

Brantford Pneumatic Vibrators for Hoppers, Bins, Screens, Concrete Buckets, Concrete Placement, Vibrator Accessories—New Haven Vibrator Co., 131 Chestnut St., New Haven 7, Conn.

Bricktex Treated Cotton Conveyor Belting—Victor Balata & Textile Belting Co., 53 Park Place, New York 7, N. Y.

Briklok High Temperature Cement—General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.

Bristol Automatic Control, Recording, Indicating Instruments, Socket Screws, Belt Lacing—The Bristol Company, Waterbury 91, Conn.

Brogal Galvanized Rope—Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.

Broncho Water Suction Hose—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Bronze Bar Stock—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Brooks Load Luger (Quarry Haulage)—Brooks Equipment & Manufacturing Co., 408 Davenport Rd., Knoxville, Tenn.

Brooks-Taylor Lime Putty Plants—Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.

Brown Hoists—The Her-Born Engr. & Mfg. Co., Box 666, Sandusky, Ohio.

Buckeye Angledozer, Backfillers, Bulldozers, Draglines—Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio.

Buckeye Clipper Power Shovels—Buckeye Traction Ditcher Co., Crystal St., Findlay, Ohio.

Bucyrus-Erie Cranes, Draglines, Dredges, Drills, Shovels, Tractor Equipment—Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis.

Bucyrus-Monihan Walking Draglines—Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis.

Bucyrus-Ruth Dredgers—Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis.

Buda Chore Boy Trucks, Industrial—The Buda Co., 15401 Commercial Ave., Harvey, Ill.

Buda-Clark Track Shifters—The Buda Co., 15401 Commercial Ave., Harvey, Ill.

Buda Hydraulic Jacks, Hand Cars, Railway & Industrial Equipment, Track & Track Equipment, Wheels (Track Laying Type)—The Buda Co., 15401 Commercial Ave., Harvey, Ill.

Buda Model HBM Jacks, Hydraulic—The Buda Co., 15401 Commercial Ave., Harvey, Ill.

Buffaloy Special Abrasive Resistant Rock Screen—Buffalo Wire Works Co., 467 Terrace, Buffalo, N. Y.

Buffalo Dryers, Dust Collecting Equipment, Exhaustors, Fans & Blowers, Ventilating Equipment—Buffalo Forge Co., P.O. Box 985, Buffalo 5, N. Y.

Buffalo Scales—Buffalo Scale Co., Inc., 1200 Niagara St., Buffalo, N. Y.

Buffalo Wire Cloth—Buffalo Wire Works Co., 467 Terrace, Buffalo, N. Y.

Bulk-Flo-Elevator Conveyor-Feeders—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Bulldog Tractor & Shovel parts—Allied Steel Products, Inc., 1721 N. E. C. Bldg., Cleveland 14, Ohio.

Busch Conveyors, Dump Bodies—The Burch Corp., Crestline, Ohio.

B & W Boilers, Burners, Pulverized Coal Equipment, Refractories, Stokers—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Byers-Cranes and Shovels—The Byers Machine Co., Ravenna, Ohio.

C

Cabelube-Power Cable Pulling Compound—Sackrette, Inc., Apple & Vandalla Sts., Cincinnati 23, Ohio.

Cable Krete Power Cable Fireproofing—Sackrette, Inc., Apple & Vandalla Sts., Cincinnati 23, Ohio.

Caldwell Helicoid Conveyors—Link-Belt Co., 2410 West 18th St., Chicago 8, Ill.

Calel Industrial Oils and Greases—Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.

Cambridge Gas Analyzers, Pyrometers and Recorders—Cambridge Instrument Co., Inc., 3732 Grand Central Terminal, New York 17, N. Y.

Capacitrol Pyrometer Controller—Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

Carbex Triple-Forged Grinding Balls—Coates Steel Products Co., Greenville, Ill.

Cardox Fire Extinguishing Systems and Cartridges for Removing Slag from Rotary Kilns—Cardox Corp., 307 N. Michigan Ave., Chicago 1, Ill.

Carloader Lifting, Carrying and Tying Fork Truck—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Carvall Scrapers—R. G. Le-Tourneau, Inc., 220 Grant St., Peoria, Ill.

Cast-Refract Castable Refractory—Gulfige Co., Inc., 627 Fifth Ave., New York 17, N. Y.

Catacraz Grizzlies—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Caterpillar Diesel Engines, Diesel Generator Sets, Earth Moving Equipment, Gasoline Engines, Natural Gas Engines, Tractors—Caterpillar Tractor Co., Peoria 8, Ill.

Cedarapids Crushers, Screens, Crushing and Screening Plants, Material Handling Equipment—Iowa Manufacturing Co., 916 16th St., N.E., Cedar Rapids, Iowa.

Cell Crete Lightweight Castable Refractory—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Celocrete Aggregates, Expanded Slag—The Celotex Corp., 120 S. La Salle St., Chicago 3, Ill.

Century Rubber Belting—The Jeffrey Manufacturing Co., 935 N. 4th St., Columbus 16, Ohio.

Chainrip Gear & Wheel Pullers—Armstrong-Bray & Co., 5364 Northwest Highway, Chicago, Ill.

Chainsaver Sprocket Wheels—The Jeffrey Manufacturing Co., 935 N. 4th St., Columbus 16, Ohio.

Challenger Conveyors—George Hais Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Champion Ball Mills—Straub Mfg. Co., Inc., 507 Chestnut St., Oakland 7, Calif.

Champion Drain Tile Machines—W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.

Chronoflow Flow Meters (electrical)—Builders-Providence, Inc., 9 Coddling St., Providence 1, R. I.

Circle Belts (Conveyor, Grader), Air & Pneumatic Tool Hose, Chute & Launder Liner, Skirt Board & Scraper Rubber—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.

Clark Industrial Tractors—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Clark 6 Industrial Tractors—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Cleco Air Valves—The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio.

Clejoy Wire Screen—The Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio.

Clevaloy Paving Breaker Steels—Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio.

Cleveland Overhead Traveling Cranes—The Cleveland Crane & Engineering Co., 1109 East 283rd St., Wickliffe, Ohio.

Cleveland Rock Drills—The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio.

Cleveland Speed Reducers—The Cleveland Worm & Gear Co., 3572 E. 80th St., Cleveland 4, Ohio.

Cleveland Tramrail Overhead Materials Handling Systems—The Cleveland Crane & Engineering Co., 1109 East 283rd St., Wickliffe, Ohio.

Cling-Surface Belt Dressing—Cling-Surface Co., 1032 Niagara St., Buffalo 13, N. Y.

Clipper Blast Hole, Prospecting, Well Drilling & Boring Machinery—The Loomis Machine Co., 15 E. Market St., Tiffin, Ohio.

Clipper Lifting, Carrying and Tying Fork Trucks—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Clipper Masonry Saws and Portable Hoists—Clipper Manufacturing Co., 4036 Manchester St., St. Louis 10, Mo.

Clipper Stripper Tamp Block Machines—Stearns Manufacturing Co., Inc., Adrian, Mich.

Clipper Superior Masonry Saw Cutting Blades—Clipper Manufacturing Co., 4036 Manchester St., St. Louis, Mo.

C-M Hoists & Cranes—Columbus McKinnon Chain Corp., Tonawanda, N. Y.

CMC Batching Equipment, Carts, Hoists, Mixers, Pumps, Wheelbarrows—Construction Machinery Co., Glenwood & Vinton, Waterloo, Iowa.

Coast Metals Hard Facing Welding Rods—Coast Metals, Inc., 1232 Camden Ave., S.W., Canton, Ohio.

Coleman XX Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Colmonoy Hard-Facing Alloys—Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

Colmonoy WCR 100 Tool Tipping Alloy—Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

Colorado Ball, Rod, Tube Mills, Diaphragm Pumps, Crushers, Rolls—Colorado Iron Works, 1824 17th St., Denver 2, Colo.

Columbia Calcium Chloride—Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh 19, Penn.

Columbia Dynamite—Equitable Powder Mfg. Co., East Alton, Ill.

Colvick Plastic Rubber—Manson Glover, 213 Pleasant, Stoughton, Mass.

Comet Hoists—Columbus McKinnon Chain Corp., Tonawanda, N. Y.

Confo Respirators—Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.

Command Brand Sisal Drilling Cable and Sisal Rope—The Edwin H. Fitter Co., 5625 Tacony St., Philadelphia 24, Penn.

Compeb Multi-Stage Ball Mills—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Concavex Special Steel Grinding Balls—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Concenco Classifiers, Feed Distributors, Feeders, Sand Washing Tables, Spray Nozzles—The Delster Concentrator Co., 915 Glasgow Ave., Fort Wayne, Ind.

Conco Overhead Bridge Cranes, Hoists, Trolleys—Conco Engineering Works, Rock Ave., Mendota, Ill.

Condor Belting, Hose, Tubing—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Conical Mills—Hardinge Co., Inc., 240 Arch St., York, Penn.

Conpass Cord Transmission Belt—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Conserve Hose and Belting—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Conset Jigs—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Consolidated Safety & Relief Valves—Manning, Maxwell & Moore, Inc., 11 Elias St., Bridgeport 2, Conn.

Continental Burial Vault Forms—Wilbert W. Haase Co., 1015 Troost Ave., Forest Park, Ill.

Continuweigh Continuous Weighing Feeder—Richardson Scale Co., Clifton, N. J.

Contra-Torque Control for AC Bucket Cranes—The Electric Controller & Manufacturing Co., 2700 E. 79th St., Cleveland 4, Ohio.

Conveyco Complete Line of Rock Products Equipment—The Conveyor Co., Inc., 3280 E. Slauson Ave., Los Angeles 11, Calif.

Conveyometer Feeding and Weighing Machinery—Richardson Scale Co., Clifton, N. J.

Conveyco-Weigh Automatic Scales of Conveyor Type—Richardson Scale Co., Clifton, N. J.

Conway Shovel—Goodman Mfg. Co., 4834 S. Halsted St., Chicago 9, Ill.

Copper King Transmission Belting—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Copper Queen Transmission Belting—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Coralite High-Alumina Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Corduroy Filter Cloth—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Cottonleather Abrasion-Resisting Fabric (Plasticized Cotton)—Southern Friction Materials Co., P. O. Box 1475, Charlotte 1, N. C.

Cottrell Electrical Precipitators, Dust Collectors—Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

Counterflow Dredge Rings—American Manganese Steel Division of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.

C-P Air Compressors, Bits, Couplings, Diesel Engines, Diesel-Generator Sets, Drills and Drilling Accessories, Holsts, Hose, Vacuum Pumps, Vibrators—Chicago Pneumatic Tool Co., 6 East 44th St., New York 17, N. Y.

CP All Equipment—Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y.

Crackerjack A Lightning Belt—The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif.

Crackerjack Rubber Hose—The American Rubber Mfg. Co., 1145 Park Ave., Oakland 8, Calif.

Cranemobile Truck Cranes—Bay City Shovels, Inc., 2611 Center Ave., Bay City, Mich.

Crater Wire Rope Lubricant—The Texas Co., 135 East 42nd St., New York 17, N. Y.

Crescent Belt Fasteners, Plates, Rivets and Rivet Extractors—Crescent Belt Fastener Co., 247 Park Ave., New York 17, N. Y.

Crescent Conveyor Chain—Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind.

Crescent Drag Scrapers—Sauerman Bros., Inc., 530 S. Clinton St., Chicago, Ill.

Crescent Pipe Molds—Flint & Walling Manufacturing Co., Inc., Kendallville, Ind.

Crocker-Wheeler Motors & Generators—Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif.

Crosby Wire Rope Clips—American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.

Crown Belting, Hose, Packing—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

C Tyrone Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Cub Portable Belt Conveyors and Loaders—Link-Belt Co., 2045 West Hunting Park Ave., Philadelphia 40, Penn.

Cub Variable Speed Controls—Standard Transmission Equipment Co., 3407 Verdugo Rd., Los Angeles 41, Calif.

Cummins Diesel Engines, Diesel-Electric Generating Sets—Cummins Engine Co., Columbus, Ind.

Curtis Air Compressors, Air Receivers, Air Valves, Holsts, Trolleys—Curtis Mfg. Co., 1988 Kienlen Ave., St. Louis 20, Mo.

Cyclone Blast Hole Drills, Drill Tools, Welded Products—The Sanderson-Cyclone Drill Co., 157 S. Main, Orrville, Ohio.

Cyclone Wire Cloth—Cyclone Fence Div., American Steel & Wire Co., Waukegan, Ill.

Cylcup Conveyors—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Cylpeba Metallic Grinding Bodies—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

D

Daraseal Curing Compound—Dewey & Almy Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.

Darex AEA Air Entraining Agent—Dewey & Almy Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.

Davenport Locomotives—Davenport Besler Corp., 2305 Rockingham Rd., Davenport, Iowa.

Davey Air Compressors—Davey Compressor Co., 286 North Water, Kent, Ohio.

Day Crushers, Pulverizers—Brooks Equipment & Manufacturing Co., 408 Davenport Rd., Knoxville, Tenn.

Dayton Thorobred V-Belts—Dayton Rubber Mfg. Co., 2342 W. Riverview Ave., Dayton 1, O.

D'Centegrator Impact Crushers—Simplicity Engineering Co., 213 S. Oak, Durand, Mich.

Dean Refractory Brick—Harbison-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.

Deep-Pan Apron Conveyors—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Defender Instruments, Regulators—Defender Automatic Regulator Co., 308 S. 8th St., St. Louis 2, Mo.

Defender Metal Babbitt Metal—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Deister-Overstrom Concentrating Tables—The Deister Concentrator Co., 915 Glasgow Ave., Fort Wayne, Ind.

DeLaval Centrifugal Blowers, Centrifugal Compressors, Centrifugal Pumps, Steam Turbines, Worm Gear Speed Reducers—DeLaval Steam Turbine Co., Trenton, N. J.

DeLaval IMO Pumps—DeLaval Steam Turbine Co., Trenton, N. J.

De Luxe V-Belt Sheaves—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Delva Water Hose—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Deming Pumps—The Deming Co., 150 Broadway, Salem, O.

Dialite High-Alumina Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Diamond Chains, Couplings, Flexible Shafts, Sprockets—Diamond Chain & Manufacturing Co., 520 Kentucky Ave., Indianapolis, Ind.

Diamond Conveyors, Crushers, Screens, etc.—Diamond Iron Works, Inc., & The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.

Diamond T Motor Trucks—Diamond T Motor Car Co., 4401 W. 26th St., Chicago 23, Ill.

Dings Clutches, Magnetic Separators & Lifting Magnetics—Dings Magnetic Separator Co., 509 E. Smith St., Milwaukee 7, Wis.

Dix-Lock Air Hose Couplings—Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia, Penn.

Dixon Hose Couplings—Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia 22, Penn.

Dodge Conveying and Power Transmission Equipment—Dodge Manufacturing Corp., 500 S. Union St., Mishawaka, Ind.

Dodge D. H. Ball Bearings—Dodge Manufacturing Corp., 500 S. Union St., Mishawaka, Ind.

Dodge System Coal Storage—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Dodge-Timken Roller Bearings—Dodge Manufacturing Corp., 500 S. Union St., Mishawaka, Ind.

Dollinger Air, Gas and Liquid Filters—Dollinger Corp. (formerly Staynew Filter Corp.), 11 Centre Pk., Rochester 4, N. Y.

Dorr Hydroseparator & Washer—The Dorr Co., 570 Lexington Ave., New York 22, N. Y.

Dorco Sand Washer & Sizer—The Dorr Co., 570 Lexington Ave., New York 22, N. Y.

Doswell & Kover Concrete Burial Vault Forms—Doswell-Kover, 1821 Howell St., Ft. Wayne 3, Ind.

Double Duty Sprocket Wheels—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Downie Conical Valves, Deep Well Pumps—Keystone Driller Co., Beaver Falls, Penn.

Drag-On Portable Scraper Conveyors—The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio.

Draggbe Liners for Mills—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

DS Take-Ups for Elevators & Conveyors, Conical Washing Screens, Automatic Sand Separators—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Dual Mix Concrete-Plaster Truck Mixers—Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio.

Dull Sand & Gravel Washeries, Excavators, Conical Washing Screens, Automatic Sand Separators—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Dunbrik Concrete Brick Machines—W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.

Duntex Roof Tile Machines—W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.

Duotrol Control Systems—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Tenn.

Durabelt Conveyor Belts—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Durabilt Frogs—L. B. Foster Co., P.O. 1647, Pittsburgh 30, Penn.

Duracord Portable Cord & Cable (electrical)—Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.

Durax Non-Metallic Sheathed Cable—Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.

Duro Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Duroil Hose—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Duroilite Sheave Blocks—Sauerman Bros. Inc., 530 S. Clinton St., Chicago, Ill.

Dustfloe Respirators—Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.

Dustite Filter-Type Respirator—Wilson Products, Inc., 2nd & Washington Sts., Reading, Penn.

Dustube Dust Collectors—American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.

D-Z-L Babbitt—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

E

Eagle Bucket Elevators, Conveyors, Impact Breakers, Jaw Crushers, Limestone Pulverizers, Material Bucket Loaders, Screw Washers, Screw Classifiers, Screw Dehydrators, Screw Re-washers, Paddle Flight Washers, Scrubbers, Log Washers, Sand Settling Tanks, Dry and Wet Pans, Shale Planers, Revolving Trunnion Screens—Eagle Crusher Co., Inc., Gallon, Ohio.

Eagle Swintek Nozzle Ladders—Eagle Iron Works, 129 Holcomb, Des Moines, Iowa.

Easton White Solid Woven Cotton Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

Ebonite Hose and Packing—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Economy Welding Rod—American Manganese Steel Div. of American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.

Edison Electric Cap Lamps—Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.

Egyptian Black Powder—Equitable Powder Mfg. Co., East Alton, Ill.

Elmco Continuous Vacuum Filters & Dryers—The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah.

Elmco Slurry Filters and Loaders—The Elmco Corp., P.O. Box 300, Salt Lake City 8, Utah.

Elastic Stop Nuts—Elastic Stop Corp. of America, 1060 Broad St., Newark 2, N. J.

Electric Ear Sound Feed Control Unit—Hardinge Co., Inc., 240 Arch St., York, Penn.

Electrifugal Close-coupled Pump & Motor Units—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Electro Lift Electric Holsts—Electro Lift, Inc., 30 Church St., New York 7, N. Y.

Electromode Electric Air Heaters—American Foundry Equipment Co., 439 S. Byrkit St., Mishawaka, Ind.

Elitex Screens—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Ellernan Calciners, Coolers, Kilns, Pre-heaters—Ellernan Co., 203 Continental Bank Bldg., Salt Lake City, Utah.

Elverite Castings, Balls—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Elwell Parker Power Industrial Cranes, Trucks, Tractors—The Elwell Parker Electric Co., 4205 St. Clair Ave., Cleveland, Ohio.

Embecco Foundation Waterproofing—The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.

Emerson-Electric Power Motors, Fans & Blowers—The Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis 3, Mo.

Enterprise Castings, Oil Burners, Diesel Engines, Process Machinery—Enterprise Engine & Foundry Co., 18th & Florida Sts., San Francisco 10, Calif.

EP Industrial Cranes, Trucks, Tractors—The Elwell Parker Electric Co., 4205 St. Clair Ave., Cleveland 14, Ohio.

Equator Conveyor Belts—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Erickson Power Lift Trucks—Erickson Special Equipment Mfg. Co., 2631 Ulysses St., N. E., Minneapolis 13, Minn.

Ecco All Equipment—Electric Steel Foundry Co., 2141 N. W. 25th Ave., Portland 10, Oregon.

Eternit Asbestos Pipe, Corrugated Asbestos—The Ruberoid Co., 500 Fifth Ave., New York, N. Y.

E-240 Hose—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Euclid Bottom-Dump Trucks, Quarry-Type Rear-Dump Trucks—The Euclid Road Machinery Co., 1361 Chardon Rd., Cleveland, Ohio.

Evansteel Abrasive Resisting Castings—Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.

Everdur Welding Rod—The American Brass Co., 2114 Meadow, Waterbury 88, Conn.

Eveready Batteries—National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.

Everwear Conveyor Belts—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

Ewart Detachable Chain—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Exbiter Extractors—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Exide Batteries—Electric Storage Battery Co., 19th St. & Allegheny Ave., Philadelphia 32, Penn.

F

Faceweid Arc Welding Electrode—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

Farrel Gear Drives, Speed Reducers—Farrel-Birmingham Co., Inc., Ansonia, Conn.

Farrel Gearflex Flexible Couplings—Farrel-Birmingham Co., Inc., Ansonia, Conn.

Farrel-Bacon Crushers—Earle C. Bacon, Inc., 17 John St., New York 7, N. Y.

Farrel-Bacon Crushers—Farrel-Birmingham Co., Inc., Ansonia, Conn.

Farrell's 85 Cast Steel—Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio.

Farrell's Hard Edge Cast Steel—Farrell-Cheek Steel Co., P.O. Box 721, Sandusky, Ohio.

Farrel-Sykes Gears—Farrel-Birmingham Co., Inc., Ansonia, Conn.

Faultless Conveyor Belts—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Federal Ball Bearings—Federal Bearings Co., 200 Fairview Ave., Poughkeepsie, N. Y.

Feeder Vibrating Pan Conveyors—The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio.

Feedometer Feeders—Hardinge Co., Inc., 240 Arch St., York, Penn.

Feedweight Constant Weight Feeders—Merrick Scale Manufacturing Co., 180-186 Autumn St., Passaic, N. J.

Fentonia Belting—Scandinavia Belting Co., 112 Keswick Ave., Charlotte, N. C.

Ferroweld Arc Welding Electrode—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

Fidelity Transmission Belt—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Fireseal Refractory Cement—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Fitter No. 1 Jute Rope—The Edwin H. Fitter Co., 5625 Tacony St., Philadelphia 24, Penn.

Flame-Otol Combustion Safeguard—Wheeler Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

Flatjet Nozzles—Spraying Systems Co., 4021 W. Lake St., Chicago 24, Ill.

Flat-Roll Belt Conveyor Idlers—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Flat-Top Screen Cloth—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Fleet-Foot Crane-Loader—Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio.

Fleetweid Arc Welding Electrode—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

Flexico HD Belt Fasteners for Conveyor and Elevator Belts—Flexible Steel Lacing Co., 4607-31 Lexington St., Chicago 44, Ill.

Flexico-Lok Lamp Guards—Flexible Steel Lacing Co., 4607-31 Lexington St., Chicago 44, Ill.

Flexicord Endless Belt—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Flexicore Floor & Roof Slabs—Price Bros. Co., 1332 E. Monument Ave., Dayton, Ohio.

Flexmore Balata Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

Flex Seal Preformed Wire Rope—Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.

Flextooth Crushers—The Jeffrey Manufacturing Co., 935-99 N. 4th St., Columbus 16, Ohio.

Flink Spreaders—Flink Co., 502 Vermillion St., Streator, Ill.

Flintalloy Alloys for Dredge & Slurry Pumps Wearing Parts—Morris Machine Works, 31 Genesee St., Baldwinsville, N. Y.

Flintalloy Alloys for Dredge & Slurry Pumps Wearing Parts—Morris Machine Works, 31 Genesee St., Baldwinsville, N. Y.

Flint-Rim Sprocket Wheels—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Floatex Foundry Shakeouts—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Flo-Dyn Explosives—Atlas Powder Co., Delaware Trust Bldg., Wilmington 99, Del.

Flourmeter Fineness Determinator—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Flo-Watch Flow Meters—Builders-Providence, Inc., 9 Coddling St., Providence 1, R. I.

Fluoresal Waterproofing—American Fluoresal Co., Inc., 635 Rockdale, Cincinnati 29, Ohio.

Fluoresal Integral Waterproofing—American Fluoresal Co., Inc., 635 Rockdale Ave., Cincinnati 29, Ohio.

Fluxo Packers—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Forsterite Refractory Brick—Harblson-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

4-Way Reversible & Interchangeable Screen Decks—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Franklin Crown Refractory Brick—Harblson-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Freeflow Conveyors, Feeders—Standard Transmission Equipment Co., 3407 Verdugo Rd., Los Angeles 41, Calif.

Free-Vane Air-Operated Controller—The Bristol Company, Waterbury 91, Conn.

Free-Vane Electronic Controller—The Bristol Company, Waterbury 91, Conn.

Freeze-All Home Freezers—Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

Friction Fighter Ball & Roller Bearings—Link-Belt Co., 519 North Holmes Ave., Indianapolis 6, Ind.

Full Flow Engine Jacket Water Coolers—Young Radiator Co., 709 S. Marquette St., Racine, Wis.

Fuller Air-Quenching Inclined Grate Coolers, Cement Coolers, Material Level Indicators, Rotary Compressors, Rotary Feeders, Rotary Vacuum Pumps, Rotary Gate Valves—Fuller Co., Fuller Bldg., Catasauqua, Penn.

Fuller Transmissions—Fuller Manufacturing Co., Kalamazoo, Mich.

Fuller-Anderson Samplers for Pulverized Materials—Fuller Co., Fuller Bldg., Catasauqua, Penn.

Fuller-Fluxo Conveying Systems—Fuller Co., Fuller Bldg., Catasauqua, Penn.

Fuller-Kinyon Conveying Systems—Fuller Co., Fuller Bldg., Catasauqua, Penn.

Fulljet Nozzles—Spraying Systems Co., 4021 W. Lake St., Chicago 24, Ill.

Fulscope Recorders & Controllers—Taylor Instrument Co., 95 Ames St., Rochester, N. Y.

Furnas Crete Castable Refractories—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Fyre-Mortar Dry Refractory Cement—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

G

Ganissand Granular Refractory Aggregate—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Gar Wood Hoists & Bodies, Winches, Cranes, Tanks, Oil Burners, Air Condition Boats—Gar Wood Industries, Inc., 7924 Riopelle St., Detroit 11, Mich.

Garfield Crushing Rolls—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Gascon Oils—Sinclair Refining Co., 630 5th Ave., New York, N. Y.

Gates Gyrotary Crushers—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Gates Vulco V-Belts, Hose—The Gates Rubber Co., 999 South Broadway, Denver 17, Colo.

Gayco Centrifugal Air Separators—Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y.

Geararmor Gear Lubricant—The Hodson Corp., 5301-11 W. 66th St., Chicago 38, Ill.

Gearkote Gear Lubricant—The Hodson Corp., 5301-11 W. 66th St., Chicago 38, Ill.

Geary Flotation Reagent Feeders—The Gallagher Co., 48 S. 2nd East St., Salt Lake City 1, Utah.

Geary-Jennings Automatic Samplers—The Gallagher Co., 48 S. 2nd East St., Salt Lake City 1, Utah.

Gelamite Special Dynamite—Hercules Powder Co., 946 King St., Wilmington 99, Del.

Gelodyn Explosives—Atlas Powder Co., Delaware Trust Bldg., Wilmington 99, Del.

Gilbert Revolving Screens—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Gilmer V-Belts—L. H. Gilmer Co., Tacony, Philadelphia 35, Penn.

Gilmer Kable Kord Flat Belts and Belting—L. H. Gilmer Co., Tacony, Philadelphia 35, Penn.

Gilmer Streamliner V-Belting—L. H. Gilmer Co., Tacony, Philadelphia 35, Penn.

Gilson Testing Screen for Aggregates—The Gilson Screen Co., P. O. Box 186, Mercer, Penn.

Gold Medal Dynamite—Illinois Powder Manufacturing Co., 730 Pierce Bldg., St. Louis 2, Mo.

Golden Gate Conveyor & Elevator Belting—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Gondola Car Dumpers—Link-Belt Co., 300 Pershing Rd., Chicago 9, Ill.

Goodall Conveyor Belting & Pump Diaphragms & Steag Hose—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Graham Variable Speed Transition—Graham Transmissions, Inc., 3854 N. Holton St., Milwaukee 12, Wis.

Gravelmaster Gravel Plants—Universal Engineering Corp., 625 C Ave. N.W., Cedar Rapids, Iowa.

Gredag Graphited Lubricants & Powders—Gredag, Inc., P. O. Box 898, Niagara Falls, N. Y.

Grefco High Temperature Cement—General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.

Griffin Grinding Mills—Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn.

Grizzly Crawler Bucket Loaders—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Groch Flotation Machines—Groch Engineering Co., 1232 W. 2nd St., Los Angeles 26, Calif.

Gyrex Screens—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Gyrosat Vibrating Screens—Productive Equipment Corp., 2926 W. Lake St., Chicago 12, Ill.

H

Hammond Screw Conveyors & Elevator Buckets—Screw Conveyor Co., 700 Hoffman St., Hammond, Ind.

Hancock Globe Valves—Manning, Maxwell & Moore, Inc., 11 Elias St., Bridgeport 2, Conn.

Hancock Hydraulic Jigs—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Handi Winch Hand Power Winch—American Hoist & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.

Hardweid Arc Welding Electrode—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

HarriSteel Woven Wire Screen Cloth—HarriSteel Products Co., 420 Lexington Ave., New York 17, N. Y.

Harwaco Bond Refractory Mortar—Harblson-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Harz Hydraulic Jigs—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Hascrome Hard-Facing Welding Rods—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

Haystello Corrosion-Resisting Alloy—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

Haydite Lightweight Aggregate—John H. Black Co., Buffalo, N. Y.; The Carter-Waters Corp., 2440 Pennway, Kansas City, Mo.; Hydraulic Press Brick Co., St. Louis, Mo.; Hydraulic-Press Brick Co., South Park, Ohio; McNear Co., San Rafael, Calif.; Washington Haydite and Concrete Products Co., Bothell, Wash.; Western Brick Co., Danville, Ind.

Haynes Stellite Hard-Facing Rods—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

Haystellite Diamond Substitute for Drilling Tools—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

Hazacord Portable Cables—The Okonite Co., Passaic, N. J.

Hearth & Baffle Mix Castable Refractory—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Heavy-Duty Rock and Gravel Crushers—Guendrier Crusher & Pulverizer Co., 2915-17 North Market St., St. Louis, Mo.

Hedgard Safety Hat—Davis Emergency Equipment Co., Inc., 45 Halleck St., Newark 4, N. J.

Helicoid Screw Conveyors—Link-Belt Co., 2410 West 18th St., Chicago 8, Ill.



M.E.L.S. Cyclones—The Northern Blower Co., 6409 Barborton Ave., Cleveland, Ohio.

Hendrick Perforated Metals—Hendrick Manufacturing Co., 39 Dundaff St., Carbondale, Penn.

Hendrick "Mitco" Open Steel Flooring—Hendrick Manufacturing Co., 39 Dundaff St., Carbondale, Penn.

Hendy Grinding Mills, Cars, Castings, Crushers, Engines, Dredges, Dryers, Pumps, Speed Reducers—Joshua Hendy Iron Works, Box 37, Sunnyvale, Calif.

Her-Born Gypsum, Tile Machines—The Her-Born Engr. & Mfg. Co., Box 686, Sandusky, Ohio.

Hercogel Special Dynamite—Hercules Powder Co., 946 King St., Wilmington 99, Del.

Hercomite Special Dynamite—Hercules Powder Co., 946 King St., Wilmington 99, Del.

Hercules Belt Idlers, Chains—The Jeffrey Manufacturing Co., 935-99 N. 4th St., Columbus 16, Ohio.

Hercules Belting, Hose, Packing—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Hercules Crushers—Gründler Crusher & Pulverizer Co., 2915-17 North Market St., St. Louis, Mo.

Hercules Dump Bodies and Hydraulic Hoists, Split-Shaft Power Take-Offs—Hercules Steel Products Co., Sherman St., Galion, Ohio.

Hercules Dynamite—Hercules Powder Co., 946 King St., Wilmington 99, Del.

Hercules Grinding Mills—Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn.

Hercules, Jr. Grinding Mills—Bradley Pulverizer Co., 123 S. Third St., Allentown, Penn.

Hercules Hoists—Columbus McKinnon Chain Corp., Tonawanda, N. Y.

Hercules Red-Strand Wire Rope—A. Leschen & Sons Rope Co., 5909 Kennerly Ave., St. Louis, Mo.

Herculite Special Dynamite—Hercules Powder Co., 946 King St., Wilmington 99, Del.

Herringsbone Speed Reducers—Link-Belt Co., 2045 Hunting Park Ave., Philadelphia 40, Penn.

High Duty Magnetic Pulleys and Separators—Stearns Magnetic Manufacturing Co., 675 S. 28th St., Milwaukee 4, Wis.

High Grade XX Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Highland Truck and Trailer Bodies and Truck Cabs—The Trailer Company of America, 31st & Robertson Ave., Cincinnati, Ohio.

Hi-Id-Si Belting—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Milco Oil Filters—The Hilliard Corp., 400 W. Fourth St., Elmira, N. Y.

Hilliard Clutches—The Hilliard Corp., 400 W. Fourth St., Elmira, N. Y.

Hiloseit High Temperature Bonding Mortar—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Hi-Lumite Fire Brick, Kiln Liners—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Hi-Power Buckets—George Haiss Mfg. Co., Inc., 391 Canal Pl., New York 51, N. Y.

Hobart Welding Machines and Equipment, Welding Rods and Electrodes—Hobart Bros. Co., Hobart Square, Troy, Ohio.

Hog Scraper Chains—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Homo Electric Furnaces—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Homocarb Electric Furnaces—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Homocord Belting, Mechanical Rubber Goods—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Homo-Flex Belting, Mechanical Rubber Goods—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Horton Steel Tanks—Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago 4, Ill.

Howe Scales—The Howe Scale Co., Rutland, Vt.

Humidigraph Direct-Reading Humidity Recorder—Bristol Co., Waterbury 91, Conn.

Hum-Mer Electric Screens—The W. S. Taylor Co., 3615 Superior St., Cleveland 14, Ohio.

Hump Electric Furnaces—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

H-W Crown Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

H-W Special Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

H-W Special H. A. High-Alumina Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Pa.

Hyalite High Alumina, Super-Refractory Brick—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Hyatt Roller Bearings—Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

Hydrex Screens—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Hygrade Speed Reducers, Worm Reducers—Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.

Hy-Lo Crimp Screens—John A. Roebeling's Sons Co., 640 Broad St., Trenton 2, N. J.

Hyater Towing Winches, Tractor Donkeys, Logging Arches, Tractor Cranes, Lift Trucks, Straddle Trucks, Mobile Cranes—Hyster Co., 2938 N. E. Clackamas, Portland 8, Oregon.

Hystevator Ditcher—Hyster Co., 2938 N. E. Clackamas, Portland 8, Oregon.

Hytempite High Temperature Cement—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

I

10 Gears—Industrial Gear Mfg. Co., 4544 W. Van Buren St., Chicago 24, Ill.

Illinois Blasting Caps—Illinois Powder Manufacturing Co., 730 Pierce Bldg., St. Louis 2, Mo.

Imperial Asbestos Pipe Covering—The Ruberoid Co., 500 Fifth Ave., New York, N. Y.

Improved Super-Gyratoy Screen Cloth—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Impulse-Sequence Time Cycle Controller—The Bristol Company, Waterbury 91, Conn.

In-cel-ate Insulation—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Incher Electric Motor Controls—Electric Machinery Mfg. Co., 1338 Tyler St., N. E., Minneapolis 13, Minn.

Independent Dynamite—Independent Explosives Co., 455 Leader Bldg., Cleveland 14, Ohio.

Indian Brand Manganese Steel Castings—The Frog Switch & Manufacturing Co., Carlisle, Penn.

Industrial Brand Rubber Boots—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Industrial Gears—Industrial Gear Mfg. Co., 4544 W. Van Buren St., Chicago 24, Ill.

Industrial Toe-Saver Rubber Boots—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Inferno Steam Hose—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Inslay Cranes, Concrete Handling Equipment, Cars, Carts, Hoppers, Draglines, Hoists, Loaders, Shovels, Skip Buckets—Inslay Manufacturing Co., Indianapolis, Ind.

Instagraph Electronic Recorder Responsive to the Thermal Spectrum—The Bristol Company, Waterbury 91, Conn.

Inslag Refractory Laggings—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insaublox Refractory Block Insulation—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insaubond Insulbrix Bonding Mortar—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insaubrix Insulating Refractory Brick—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insaucid Plastic Surface Coating for Insulating Refractories—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insaicrete Insulating Refractory Concrete—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insuline-Ground Insulating Refractory Powder—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Insuline-Sized Aggregate Insulating Refractory Aggregate—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Inswell Chains—Columbus McKinnon Chain Corp., Tonawanda, N. Y.

International Cars, Exhaustors, Fans & Blowers, Ventilating Equipment—International Engineering Inc., 1143 Bolander, Dayton, Ohio.

Iron Oilite Bearings & Cored, Bar & Plate Stock—Chrysler Corp., Amplex Div., 6501 Harper Ave., Detroit 11, Mich.

Ironsides Belting, Hose—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Isorod Self-Hardening Alloy—The Resist-Loy Co., 127 Baylis St., Grand Rapids 7, Mich.

I-T-E Circuit Breakers, Relays and Switches—I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Penn.

Itelite Small Electric Circuit Breakers—I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Penn.

IXL Gears—Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.

J

Jackbit Drill Bits—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jackfurnace Furnaces—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jackhammer Rock Drills—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jackmill Hot Milling Machines—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jackrod Drill Rods—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Jaeger-Lakewood Paving Equipment—Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio.

Jaybee Super Fire Brick—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Jeffrey-Traylor Coolers, Dryers, Feeders, Screens—The Jeffrey Manufacturing Co., 935-99 N. 4th St., Columbus 16, Ohio.

Jersey Wire Cloth (Oblong Mesh, Steel), Screens (Vibrator, Shaker, Gravity, Revolving)—John A. Roebeling's Sons Co., 6408 S. Broad St., Trenton 2, N. J.

JFS Variable Speed Reducers—Stephens-Adams Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

JFS-JR Variable Speed Controls—Standard Transmission Equipment Co., 3407 Verdugo Rd., Los Angeles 41, Calif.

Jigger Vibrating Screens—Productive Equipment Corp., 2926 W. Lake St., Chicago 12, Ill.

Joltcrete Vibrator Block Machines—Stearns Manufacturing Co., Inc., Adrian, Mich.

Judson Steam Hose—Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.

Jumbo Crushers and Pulverizers—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo.

Jumbo Jr. Crushers—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis, Mo.

Junior Tandem Portable Rock Plants—Towra Manufacturing Co., 916 16th St., N. E., Cedar Rapids, Iowa.

K

K-2 Motor Winch—Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

K-5 Motor Winch—Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Kadco Portable Dust Collectors for Rock Drilling Operations—Complete Machinery & Equipment Co., Inc., 36-40 Eleventh St., Long Island, N. Y.

Karbate Heat Exchangers—National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.

Karry Crane Mobile Cranes—Hyster Co., 2938 N. E. Clackamas, Portland 8, Ore.

Kelco Cutting Oil—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Kellogg-American Air Compressors & Paint Spray Equipment—Kellogg Div., American Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.

Kenmore Refractory Brick—Harbison-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Penn.

Kent Filter Air Separator—Kent Mill Co., 10 Rapelye St., Brooklyn 31, N. Y.

Kent Mill Pulverizer—Kent Mill Co., 10 Rapelye St., Brooklyn, 31, N. Y.

Kent Standard 4 Bar Tamp Hand Strippers & Concrete Mixers—Kent Machine Co., Cuyahoga Falls, Ohio.

Keycut Cutting Oil—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Keylubric Air Tool Lubricant—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Keystone Ball Bearing Conversion Endbells for Electric Motors—Keystone Electric Co., 1220 Ridgely St., Baltimore 30, Md.

Keystone Blast Hole Drills, Cranes, Drilling Tools, Excavators, Power Shovels, Trench Hoes—Keystone Driller Co., 2001-21 8th Ave., Beaver Falls, Penn.

Keystone Canvas-Stitched Belting—Manheim Manufacturing & Belting Co., Manheim, Penn.

Keystone Lubricants, Lubricating Devices—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Kiesler Clamshell Bucket—Joseph F. Kiesler Co., 938 W. Huron St., Chicago, Ill.

King Hoses Clamps and Couplings—Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia, Penn.

Kirkham Concrete Block Machines—Concrete Transport Mixer Co., Inc., Rosedale Ave., St. Louis 12, Mo.

Kiessens Grease Fittings & Grease Guns—Lincoln Engineering Co., 5701 Natural Bridge, St. Louis 20, Mo.

Knittel Ring Type Crushers—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Knox All Equipment—Knox Manufacturing Co., 811-823 Cherry St., Philadelphia 7, Penn.

Koehring Cranes, Draglines, Dumpers, Mixers, Shovels—Koehring Co., 30th & Concordia Ave., Milwaukee, Wis.

Kominuter Ball Mills—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Korpak Concrete Block Machines—W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.

Kotal Waterproofing, Aggregate—Kotal Co., 52 Vanderbilt Ave., New York 17, N. Y.

Kromag Chrome-Magnesia Brick—E. J. Lavino & Co., 1528 Walnut St., Philadelphia, Penn.

Kron Bagging Scales, Batching Scales, Compensation Scales, Hopper Scales, Weigh Larries—The Kron Co., 1720 Fairfield Ave., Bridgeport 3, Conn.

Krusader Packing—Quaker Rubber Corp., Conly & Milnor Sts., Philadelphia 24, Penn.

Kubit Impact Breakers—Iowa Manufacturing Co., 916 - 16th St. N.E., Cedar Rapids, Iowa.

Kue-Ken Crushers—Straub Manufacturing Co., 507 Chestnut, Oakland, Calif.

Kueneman Gyracone Crushers—Straub Mfg. Co., Inc., 507 Chestnut St., Oakland 7, Calif.

L

LaCrosse Elevator Belting & Transmission Belting—Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.

Lafdensin Waterproofing—American Fluorite Co., Inc., 635 Rockdale, Cincinnati, Ohio.

LaFrance Republic Motor Trucks—Sterling Motor Truck Co., Inc., 2021 S. 54th St., Milwaukee, Wis.

Lamcord Belting, Mechanical Rubber Goods—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Lamilleite Absorbent—Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.

Lapeer Trailers—The Trailer Company of America, 31st & Robertson Ave., Cincinnati, Ohio.

Laughlin Hoist Hooks and Wire Rope Sockets—The Thomas Laughlin Co., 143 Fore St., Portland, Me.

Lavino Magnesite Brick—E. J. Lavino & Co., 1528 Walnut St., Philadelphia 2, Penn.

Lawrence Pumps—Lawrence Machine & Pump Corp., 371 Market St., Lawrence, Mass.

Laytex Building Wire—U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

L-B Elevating, Conveying and Power Transmission Machinery—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Lesly Vibrating Screen—The Deister Concentrator Co., 915 Glasgow Ave., Fort Wayne, Ind.

Ledyard Burial Vault Molds and Handling Equipment—The Ashland Vault, Inc., 114 7th St., Ashland, Ohio.

Lenix Short Center Belt Drives—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Ley Bushed Chain—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Liberty Dynamite—Equitable Powder Mfg. Co., East Alton, Ill.

Lift Gate Hydraulic Powered Elevating Rail Gate for Motor Truck Bodies—Anthony Co., Inc., Streator, Ill.

Limepulver Pulverizers—The Jeffrey Manufacturing Co., 935-99 N. 4th St., Columbus 16, Ohio.

Link-Arc Magnetic Contactors—The Electric Controller & Manufacturing Co., 2700 E. 79th St., Cleveland 4, Ohio.

Link-Belt Elevating, Conveying, Screening, Drying and Power Transmission Machinery—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Link-Belt Speeder Cranes, Shovels, Draglines, Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.

Lion Conveyor Belts—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Lith-I-Bar Jolt Machines—W. E. Dunn Manufacturing Co., 23 W. 24th St., Holland, Mich.

Little Giant Portable Elevators, Lime Spreaders—Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

Live-Roll Grizzly—Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

L & N Electrical Instruments—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 4, Penn.

Lobite Rock Loaders—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Lock Joint Concrete Pipe—Lock Joint Pipe Co., 150 Rutledge Ave., East Orange, N. J.

Lockseam Spiralweld All Products—Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.

Lo-Maintenance Motors & Controls—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Lorain Moto-Cranes Rubber Tired Cranes—The They Shovel Co., 1374 E. 28th St., Lorain, Ohio.

Lorain Power Shovels, Cranes, Clamshells, Draglines—The They Shovel Co., 1374 E. 28th St., Lorain, Ohio.

Loant Air Hose, Steam Hose—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Lo-veyor Vibrating Conveyors—Ajax Flexible Coupling Co., 2 English St., Westfield, N. Y.

Low-Head Vibrating Screens—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

L-R Flexible Couplings—Lovejoy Flexible Coupling Co., 5037 W. Lake St., Chicago 44, Ill.

Lubriplate Lubricants—Fiske Brothers Refining Co., Lubriplate Div., 129 Lockwood St., Newark 5, N. J.

M

Magnex Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Magniet Free-Vane Air-Operated Controller—The Bristol Company, Waterbury 91, Conn.

Magnolia Anti-Friction Eabbitt Metal—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Magnolia Bearing Bearing Bronze—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Mahr Furnaces and Heat Equipment—Diamond Iron Works, Inc. & The Mahr Mfg. Co. Div., 1800 N. 2nd St., Minneapolis 11, Minn.

Malacca Plastic Rubber—Glover Coating Co., 376 Washington St., Malden, Mass.

Maltese Cross Elevator & Conveyor Belts, Hose (Air Drill, Suction, Water, Steam, Concrete Placing), and Dredging Sleeves—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.

Mammoth Crushers and Pulverizers—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo.

Manasite Detonators—Atlas Powder Co., Delaware Trust Bldg., Wilmington 99, Del.

Manganel Welding Products—Stulz-Sickles Co., 134 Lafayette St., Newark 5, N. J.

Manganweld Arc Welding Electrode—Lincoln Electric Co., 12518 Colit Rd., Cleveland 1, Ohio.

Mango Shovel Parts—Allied Steel Products Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio.

Manhattan Belting—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Manson Friction Tape—The Okonite Co., Passaic, N. J.

Man-teen Chute Linings—Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 19, Penn.

Marcy Ball, Rod and Tube Mills—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver 17, Colo.

Marfak Lubricants—The Texas Co., 135 E. 42nd St., New York 17, N. Y.

Marion Dump and Truck Bodies and Hoists—The Marion Metal Products Co., 413 Monroe, Marion, Ohio.

Marion Shovels, Cranes, Draglines—Marion Steam Shovel Co., W. Center St., Marion, Ohio.

Markal Marking Sticks—Markal Co., 6 E. Lake St., Chicago 1, Ill.

Marmon-Herrington All-Wheel Drive Trucks, Tractors—Marmon-Herrington Co., Inc., 1511 W. Washington St., Indianapolis, Ind.

Masoco Automatic Feed Controllers for Grinding Mills, Rock Bit Grinders—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-Adams Density Controllers—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-Fahrenwald Flotation Machines—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-Grigsby Pinch Valves—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-Hi-Capacity Laboratory Crushers—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-McCarthy Hot Miller—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Masoco-McCool Laboratory Pulverizer—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Master Belting—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Master Pulverizers—Guendler Crusher & Pulverizer Co., 2915-17 N. Market St., St. Louis, Mo.

Master Tandem Portable Rock Plants—Iowa Manufacturing Co., 916-16th St. N.E., Cedar Rapids, Iowa.

Matchless Mechanical Rubber Goods—U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

Maxecon Mill Pulverizer—Kent Mill Co., 10 Rapelye St., Brooklyn 31, N. Y.

Maxi Engineered Capstans, Crane Undercarriages, Four Wheel Drives, Holsts, Six Wheel Units, Utility Derrick, Truck Units—Six Wheels Inc., 1559-1584 E. 20th St., Los Angeles 11, Calif.

Maxilfe Conveyor Belting—The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio.

McCracken Concrete Pipe Machinery—Concrete Pipe Machinery Co., 9th & Division Sts., Sioux City 19, Iowa.

McCully Gyrotory Crushers—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

McGann-Kuntz Lime Kilns—McGann Manufacturing Co., P.O. Box 1187, York, Penn.

Meckum Alloys, Barges, Bucket Parts, Castings, Conveyor Idlers, Dredges, Dredge Pipe, Dredge Pumps, Log Washers, Sand Drags, Scrubbers—Meckum Engineering, Inc., 63 W. Jackson Blvd., Chicago 4, Ill.

Merco Valves—Merco Nordstrom Valve Co., 400 N. Lexington Ave., Pittsburgh, Penn.

Mesabi Crushing Rolls—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Meteor Hoists—Columbus McKinnon Chain Corp., Tonawanda, N. Y.

Metropolitan Hose, Air Drill—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Micromax Pyrometers & Recorders—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Micronizer Pulverizers—International Pulverizing Equipment, New Albany Rd., Moorestown, N. J.

Miles Concrete Products Equipment—The Miles Manufacturing Co., 545-7 Hupp Ave., Jackson, Mich.

Mine Air Compressors—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Mine King Air Hose—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Missing Links Chain Repair Links—The Thomas Laughlin Co., 143 Fore St., Portland, Me.

Mobil-Air Portable Compressors—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Mobilloader Tractor Shovel—Athey Truss Wheel Co., 5631 W. 65th St., Chicago 38, Ill.

Mogul Core Breakers—Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland 5, Ohio.

Mogul Hammermills—Dixie Machinery Manufacturing Co., 4200 Goodfellow, St. Louis, Mo.

Mogul Junior Hammermills — Dixie Machinery Manufacturing Co., 4200 Goodfellow, St. Louis, Mo.

Mohawk Belt (Elevator, Conveyor, Grader—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.

Moler Insulating Brick — F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Moly Shovels, Spades, Scoops—Wood Shovel & Tool Co., Roosevelt & Clark Sts., Piqua, Ohio.

Monarch Burial Vault Forms—Wilbert W. Haase Co., 1015 Troost Ave., Forest Park, Ill.

Monarch Hose (Air Delli, Steam, Jetting, Hydraulic, Grout, Cement Gun and Dry Material)—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo 5, N. Y.

Monasite Detonators—Atlas Powder Co., Delaware Trust Bldg., Wilmington 99, Del.

Monofabrik Plastic Fire Brick—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Mono-Line Plastic Fire Brick—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Monoset Free-Vane Air-Operated Controller—The Bristol Company, Waterbury 91, Conn.

Moore Bin Gates—Stephens-Adams Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Morag Crushing Plant—Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa.

Mo-Rex High Heat Fire Brick—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Morok Portable Rock Plants—Iowa Manufacturing Co., 916 16th St. N. E., Cedar Rapids, Iowa.

Mortalrest Refractory Cement—Walsh Refractories Corp., 4070 North First St., St. Louis 7, Mo.

Moto-Crane Mobile Rubber-Tired Cranes and Shovels—The Thew Shovel Co., E. 28th St., Lorain, Ohio.

Motorcompressor Stationary Compressors—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Motor Driven Alternating Valves, Rotary Valves—Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

Motoreducer Gear Motor—The Falk Corp., 3001 W. Canal, Milwaukee 8, Wis.

Moto Reducer Motorized Speed Reducers—Philadelphia Gear Works, Erie Ave. & G St., Philadelphia 34, Penn.

Motorpump General Service Pump—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Moto-Vibro Vibrating Screens—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

MS Malleable Iron Buckets—Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind.

M.S.A. First Aid Cabinets, Goggles, Kits & Supplies, Ventilating Equipment, Welders Protective Equipment—Mine Safety Appliances Co., Brad-dock, Thomas & Meade Sts., Pittsburgh 8, Penn.

M-26 Insulating Fire Brick—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Mulitex Fire Brick, Kiln Liners, Refractory Cement—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Multicone Dust Collectors—Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

Multiduty Multiple Groove V-Belt Sheaves—The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

Multimite Enclosed Electric Switch Gear—T-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Penn.

Murco Heaters—D. J. Murray Manufacturing Co., Wausau, Wis.

Murray Braided Slings—Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.

N

Naco Chain—National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio.

National Conveyor Belts—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Nelson Bucket Loaders—N. P. Nelson Iron Works, Inc., 820 Bloomfield Ave., Clifton, N. J.

Neverleak Couplings (Hose, Pneumatic)—The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio.

Neverslip Hose Clamps—The Cleveland Rock Drill Co., 3781 E. 77th St., Cleveland, Ohio.

Newark Wire Cloth Products—Newark Wire Cloth Co., 351 Vernon Ave., Newark 4, N. J.

Newhouse Gyrotary Crushers—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Newtype Cord Suction Hose—Goodall Rubber Co., Inc., 5 S. 36th St., Philadelphia 4, Penn.

NF Crushers & Pulverizers—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo.

Ni-Hard Castings—Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

907 Low Fuming Welding Rod—The American Brass Co., 2114 Meadow, Waterbury 88, Conn.

Noble Batches Batching Plants—Noble Co., 1860 7th St., Oakland 7, Calif.

No Gall Compound—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

No-Graf Non-Graphited Lubricants—Gredag, Inc., P. O. Box 898, Niagara Falls, N. Y.

No-Leak Apron Conveyors—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Non-Clog Hammermills—Dixie Machinery Manufacturing Co., 4200 Goodfellow, St. Louis, Mo.

Non-Clogging Spray Nozzles—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Non-Fluid Oil Lubricants (Ball and Roller Bearing, Pressure, Gear, Motor, Wire Rope)—New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, N. Y.

Norblo All Products—The Northern Blower Co., 6409 Barberton Ave., Cleveland 2, Ohio.

Nordco Valve Lubricants—Merco Nordstrom Valve Co., 400 N. Lexington Ave., Pittsburgh, Penn.

Nordstrom Valves—Merco Nordstrom Valve Co., 400 N. Lexington Ave., Pittsburgh, Penn.

Norma-Hoffmann Precision Ball, Roller & Thrust Bearings—Norma-Hoffmann Bearings Corp., Hamilton Ave., Stamford, Conn.

Northwest Cranes, Draglines, Wagon Cranes, Excavators, Shovels, Truck Cranes, Truck Shovels—North-West Engineering Co., 28 E. Jackson Blvd., Chicago 4, Ill.

No-Vent Electric Blasting Caps—Hercules Powder Co., 946 King St., Wilmington 90, Del.

Nurex Grinding Balls—National Malleable and Steel Castings Co., 10600 Quincy Ave., Cleveland, Ohio.

O

"O" Class Combination Chain—Link-Belt Co., 220 South Belmont Ave., Indianapolis 6, Ind.

O-D-S Slurry Pumps—Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.

Oilite Machine Parts & Filters—Chrysler Corp., Amplex Div., 6501 Harper Ave., Detroit 11, Mich.

Oilite Bronze Bearings & Cored, Bar and Plate Stock—Chrysler Corp., Amplex Div., 6501 Harper Ave., Detroit 11, Mich.

Oil King Air Hose—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Oil-Rite Air Line Lubricators—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Oil-Rite Constant Level Lubricators, Drip Oilers, Loose Pulley Lubricators, Spindle Lubricators—Oil-Rite Corp., 3466 S. 13th St., Milwaukee 7, Wis.

O.K. Compressors, Holists—O.K. Clutch & Machinery Co., Florence St., Columbia, Penn.

Okocord Portable Cables—The Okonite Co., Passaic, N. J.

Okolite Insulated Wire—The Okonite Co., Passaic, N. J.

Okonite Rubber Splicing Tapes—Okonite Co., Passaic, N. J.

Oliver Continuous Vacuum Filters, Hopper Dewaterers—Oliver United Filters, Inc., 33 W. 42nd St., New York 18, N. Y.

Olson Self-Dumping Mine Cages—Eagle Iron Works, 129 Holcomb Ave., Des Moines, Iowa.

Omicron Mortarproofing for Masonry Mortars—The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.

Opaline Motor Oil—Sinclair Refining Co., 630 5th Ave., New York, N. Y.

Oriele Hose and Belting—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Ortho-O-Meters Liquid Meters—Automatic Liquid Meter Co., 1372 E. 15th St., Los Angeles 21, Calif.

Osgood Transmission Belting—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Osgood Power Shovels, etc.—The Osgood Co., Marion, Ohio.

Overstrom Universal Concentrating Tables—Straub Manufacturing Co., 507 Chestnut, Oakland, Calif.

P

Pacemaker Conveyor Belt, Transmission Belt, Dredge Sleeves—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

Pacemaker Stone Plants—Universal Engineering Corp., 625 C Ave. N.W., Cedar Rapids, Iowa.

Pacific Belt Conveyor Carriers—Stephens-Adams Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Pacific Coast Carriers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Pacific Rock Bitgrinders—Alloys Steel & Metals Co., 1832 E. 55th St., Los Angeles 11, Calif.

Palmetto Solid Woven Cotton Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

P & H Arc Welding Apparatus, Backfillers, Buckets, Cranes, Ditchers, Draglines, Hard Surfacing Metals, Holists, Shovels, Trenching Machines, Welding Machines and Supplies—Harnischfeger Corp., 4400 W. National, Milwaukee, Wis.

Paranite-G. O. P. Belting, Hose, Packing, Linings—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

Patchmaster Asphalt Plant—Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa.

Payloader Tractor-Loader—The Frank G. Hough Co., E. Sunnyside Ave., Libertyville, Ill.

P. D. Vibrating Screens—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Peck Overlapping Pivoted Bucket Carriers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Peerless Mechanical Rubber Goods—U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

Peerless Steel Bushed Chain—The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio.

Pelco Coolers—Portable Elevator Mfg. Co., 920 E. Grove St., Bloomington, Ill.

Pennsylvania Air Compressors & Centrifugal Pumps—Pennsylvania Pump & Compressor Co., Easton, Penn.

Pennet Interwoven Cotton Transmission Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

Perfect Wire Screen or Cloth—Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis, Mo.

Perfection Separator Vibrating Screens—Kent Mill Co., 10 Rapelye St., Brooklyn 31, New York.

Permaset Preformed Wire Rope—Jones & Laughlin Steel Corp., 3rd & Ross Sts., Pittsburgh 30, Penn.

Permite Aluminum Alloy, Castings, Aluminum Paint, Industrial Finishes, Magnesium Alloy Castings—Aluminum Industries, Inc., 2438 Beckman, Cincinnati, Ohio.

Per-O-Flow Classifiers—Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Phoenix Cars, trailers—Easton Car & Construction Co., Box 270, Easton, Penn.

Pioneer Crushers, Screens & Plants—Pioneer Engr. Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Pipe Layers Tractor-Mounted Cranes—Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.

Piqua Shovels, Spades, Scoops—Wood Shovel & Tool Co., Roosevelt & Clark Sts., Piqua, Ohio.

Pirumite Chute Lining—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Pitmaster Crushing Plant—Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa.

P. I. V. Gear Positive Infinitely Variable Speed Transmissions—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Piamondon Clutches—Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.

Plastic Furnace Lining Refractory Plastic—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Plat-o-Concentrating Tables—Vibrating Screens—Delster Machine Co., 1933 E. Wayne St., Fort Wayne 4, Ind.

Piloweld Pipe and Tank Lining—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Plus Type Steel Chain—Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind.



PMCO Welded Dippers—Pettibone Mulliken Corp., 4710 W. Division St., Chicago 51, Ill.

Poidometer Weighing Conveyors—Schaffer Poidometer Co., 2828 Smallman St., Pittsburgh 22, Penn.

Porter Agitators, Ball Mills, Locomotives, Mixers, Wood Tanks—H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.

Porto-Power Hydraulic Equipment for maintenance work—Blackhawk Manufacturing Co., 5325 W. Rogers, Milwaukee, Wis.

Potentiometer Potentiometer Controller—Wheelock Instruments Co., 847 W. Harrison St., Chicago 7, Ill.

Power-Flex Underfeed Stokers—Link-Belt Co., 2410 W. 18th St., Chicago 8, Ill.

Power Hoe Drag Scrapers—Link Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Power King Transmission Belting—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Power Nickel Genuine—Tin Base Babbitt—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Powersteel Wire Rope—Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.

Pozzolith Cement Dispersing Agent—The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.

P. P. P. Packing—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Pratt Box Car Loaders—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Premier Hammermills—Dixie Machinery Manufacturing Co., 4200 Goodfellow, St. Louis, Mo.

Premier Junior Hammermills—Dixie Machinery Manufacturing Co., 4200 Goodfellow, St. Louis, Mo.

Promal Cast Chains, Buckets, Castings—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Propelloff Water Meters—Builders-Providence, Inc., Div. of Builders Iron Foundry, 9 Codding St., Providence 1, R. I.

Protectomotor Air and Liquid Filters Including Filters for Engine and Compressor Intake—Dollinger Corp. (Formerly Staynew Filter Corp.), 11 Centre Park, Rochester 4, N. Y.

Pulvazon Coating & Filler—Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.

Pulverator Multi-Impact Hammer Mills—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Pyramid Babbitt Metal—Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.

Pyrasteel Heat Resisting Castings—Chicago Steel Foundry Co., 3720 S. Kedzie Ave., Chicago 32, Ill.

Pyrotor Drying and Grinding Mills—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Pyromaster Round-Chart Potentiometer Recorder & Controller—Furnished as a Pyrometer, Resistance Thermometer, Thermometer & Shunt Ammeter—The Bristol Company, Waterbury 91, Conn.

Pyrotor Potentiometer Pyrometers and Resistance Thermometers—Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio.

Q

Q-Chromastic Plastic Super-Refractory Cement, Surfacing Mortar—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Q-Chrome Neutral Base Refractory Cement—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Q-Seal Plastic, Expansive, Joint-Sealing Compound—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Quad Atmospheric Cooling & Condensing Units—Young Radiator Co., 709 S. Marquette St., Racine, Wis.

Quaker Belting, Hose, Packing—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Quickset Waterproofing—American Flurest Co., Inc., 635 Rockdale, Cincinnati 29, Ohio.

Quigley Fire Brick—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Quigley Gun Shoots Refractory & Concrete Mixtures—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Quigley Retort Cement for Hot Patching Coal Gas Retorts—Quigley Co., Inc., 527 Fifth Ave., New York 17, N. Y.

Quimby Pumps—Quimby Pump Co., Division of H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.

Quimby Centrifugal Pumps—H. K. Porter Co., Inc., 1930 Oliver Bldg., Pittsburgh, Penn.

Quinn Concrete Pipe Machinery, Concrete Tile Machines, Molds and Carts—Quinn Wire & Iron Works, Boone, Iowa.

R

Rapidmix Portable Asphalt Plants—Iowa Manufacturing Co., 916 16th St., N.E., Cedar Rapids, Iowa.

RC and RCS Unloader Pilot Valves—R. Conrader Co., 1209 French St., Erie 2, Penn.

RC Cribbing—Price Bros. Co., 1932 E. Monument Ave., Dayton, Ohio.

RC Flexible Shaft Couplings—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

RC-Class Roller Chain—Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind.

RDA For Raw Grinding & Oil Well Cement—Dewey & Almy Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.

Red Arch Dragline Buckets & Chain—Bucyrus-Erie Co., P.O. Box 56, South Milwaukee, Wis.

Redder Conveyor Elevators—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Redwing Air Hose—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Reeves Variable Speed Motor-Drives, Motor Pulleys and Transmissions—Reeves Pulley Co., Columbus, Ind.

Regulex Amplifying Generator or Exciter Electrical Control—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Rek-Tang Wire Cloth—Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis 10, Mo.

Rek-Tang Wire Screen or Cloth—Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis, Mo.

Reliance Belt Idlers, Chain—The Jeffrey Manufacturing Co., 935-99 N. 4th St., Columbus 16, Ohio.

Reliance Conveyor & Elevator Belting, Hose (Water, Steam, Suction & Discharge)—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Reliance Crushing, Screening and Washing Units—Universal Road Machinery Co., 27 Emerick St., Kingston, N. Y.

Reliance Leather Belting—Chicago Belting Co., 113 N. Green St., Chicago 7, Ill.

Repeat-O-Matic Precision Meters—Batching Meters—Automatic Liquid Meter Co., 1372 E. 15th St., Los Angeles 21, Calif.

Resisto-Loy Hard Facing Alloy—The Resisto-Loy Co., 127 Baylis St., S.W., Grand Rapids 7, Mich.

Resoweld Pipe and Tank Lining—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Revolver Whirley—American Holst & Derrick Co., 63 S. Robert St., St. Paul 1, Minn.

Rex Chain and Belt Elevators and Conveying Machinery, Chain Drives, Construction Machinery, Flat Spray Nozzles, Power Transmission Machinery, Sprockets—Chain Belt Co., 1600 Bruce St., Milwaukee, Wis.

Rex-Metal Castings—Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis.

Rib-Cone Ball-Mills—Straub Manufacturing Co., 507 Chestnut, Oakland, Calif.

Ring-Roll Mill—Grinding Mill—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Rip Cord Closure (for Cement Bags)—Bemis Bros. Bag Co., 410 Poplar St., St. Louis 2, Mo.

Rip-Flo Vibrating Screens—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Ritex Kiln Liners—General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.

Rivetsless Chain—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

Robins Conveying Machinery—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Robins-Mead Morrison Bridges, Towers—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Robins-Messier Ore Bedding System—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Robins-Oro Feeders—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Rockart Rock Cart—Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa.

Rock Emery Grinding Mills—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Rocker Shovel Loaders & Unloaders—The Elmco Corp., P. O. Box 300, Salt Lake City 8, Utah.

Rocking Contact Generator Voltage Regulators & Rheostats—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Rockwood All Equipment—Rockwood Mfg. Co., 1801 English Ave., Indianapolis, Ind.

Rocobeco Elevator Belts—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Ro-Flo Rotary Air Compressors, Vacuum Pumps—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Rolling Ring Crushers & Pulverizers—American Pulverizer Co., 1249 Macklind Ave., St. Louis 10, Mo.

Roli-Pak Detonator Package—Atlas Powder Co., Delaware Trust Bldg., Wilmington 99, Del.

Rollway Bearings—Rollway Bearing Co., 541 Seymour St., Syracuse 4, N. Y.

Rol-Man Manganese Steel Products—Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia, Penn.

Ropeveyor Portable Electric Conveyors—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Ro-Tap Testing Sleeve Shaker—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Rotary Crushers—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Rotex Screening Machines—The Orville Simpson Co., 1230 Knowlton St., Cincinnati 23, O.

Roto-Clone Dust Collector—American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Kentucky.

Roto-Louvre Dryers, Coolers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Rotoscoop Sand Dewaterers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Ro-Twin Rotary Air Compressors, Vacuum Pumps—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Roustabout Crane Tractor Model Crane—The Hughes-Kennan Co., P. O. Box 398, Mansfield, Ohio.

Royal All Rubber Goods—U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.

R P M Automotive Greases & Motor Oils—Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.

R P M Delo Lubricating Oils—Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.

Rubberdisc Conveyor Idlers—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Rubilene Oils—Sinclair Refining Co., 630 5th Ave., New York, N. Y.

Ruggles-Coles Coolers, Dryers, Kilns—Ruggles-Coles Engineering Co., 122 E. 42nd St., New York, N. Y.

Rust Avert Protective Coating for Metal Parts, Outdoor Storage—Turco Products Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

Rust Bar No. 20 Protective Coating for Metal Parts, Indoor Storage—Turco Products Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

S

S & D Floater Ball Bearing Wheel—Sanford-Day Iron Works, Inc., Dale Ave., Knoxville, Tenn.

S-A Conveying, Elevating Screening & Transmission Equipment—Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Saco Helical Gear Speed Reducers—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Sacon Belt Conveyor Carriers—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Safe-T Stopers—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Safety Hoist Hooks—The Thomas Laughlin Co., 143 Fore St., Portland, Me.

Safety Flat Grip Wire Rope Clips—The Thomas Laughlin Co., 143 Fore St., Portland, Me.

Sagamore Hose and Belting—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

St. Paul Hydraulic Hoists—Truck Equipment Co. Inc., 1791 Fillmore Ave., Buffalo, N. Y.

**Sakrete Dry Pre-Mixed Concrete**—Sakrete, Inc., Apple St. & Vandalla, Cincinnati 23, Ohio.

**Sakrete Mortar Mix Dry Pre-Mixed Mortar**—Sakrete, Inc., Apple St. & Vandalla, Cincinnati 23, Ohio.

**Sakrete Waterite Concrete**—Damp-proofing—Sakrete, Inc., Apple St. & Vandalla, Cincinnati 23, Ohio.

**Sandow Conveyor Belt, Sand Suction Hose**—Cincinnati Rubber Mfg. Co., Franklin Ave. & Norwood Station, Cincinnati 12, Ohio.

**Saturn Hose and Belting**—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

**SC<sup>2</sup> System for Controlling Quality of Concrete**—Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J.

**SC<sup>2</sup> Precision Concrete Control**—Scientific Concrete Service Corp., 1252 Waverly Pl., Elizabeth 3, N. J.

**Scandilux Belting**—Scandinavia Belting Co., 112 Keswick Ave., Charlotte, N. C.

**Scandinavia Belting, Brake Lining**—Scandinavia Belting Co., 112 Keswick Ave., Charlotte, N. C.

**Schaffer Continuous Lime Hydrator**—Arnold & Weigel, Inc., Woodville, Ohio.

**Scheneck Elevator Buckets**—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

**Schneible Multi-Wash Dust Collecting Systems**—Claude B. Schneible Co., 2827 - 25th St., Detroit 16, Mich.

**Schramm Air Compressors**—Schramm, Inc., Virginia Ave., West Chester, Penn.

**Schultress Lime Hydrators**—McGann Manufacturing Co., P.O. Box 1187, York, Penn.

**Scraper Haulers Hoists**—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

**Screw-Lift Vertical Screw Conveyor Elevators**—Screw Conveyor Co., 700 Hoffman St., Hammond, Ind.

**Screw-Veyar Screw Conveyors**—Screw Conveyor Co., 700 Hoffman St., Hammond, Ind.

**SD Class Drag Chain**—Link-Belt Co., 220 So. Belmont Ave., Indianapolis 6, Ind.

**Seaco Welding Products**—Stulz-Sickles Co., 134 Lafayette St., Newark 5, N. J.

**Seal Rock Hose, Air Drill & Hose (Water, Steam, Suction & Discharge)**—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

**Sealmaster Ball Bearing Units**—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

**Seco Vibrating Screens and Wire Cloth**—Screen Equipment Co., Inc., 9 Lafayette Ave., Buffalo 13, N. Y.

**Selectro Vibrating Screens**—Productive Equipment Corp., 2926 W. Lake St., Chicago 12, Ill.

**Semalu Kiln Liners**—General Refractories Co., 1600 Real Estate Trust Bldg., Philadelphia, Penn.

**Seneca Bearings, Belt Idlers**—Webster Mfg., Inc., Tiffin, Ohio.

**Seneca Hose and Belting**—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

**Service Brand Conveyor Belts**—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

**75 Elevator Belting & Steam Hose**—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

**Shaw Sand Classifiers**—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

**Sheppard All American Diesel Engines**—R. H. Sheppard Co., Philadelphia St., Hanover, Penn.

**Shield-Arc Welding Machine**—Lincoln Electric Co., 12813 Cott Rd., Cleveland 1, Ohio.

**Shunt Flo Steam and Air Meters**—Builders - Providence, Inc., Div. of Builders Iron Foundry, 9 Coddling St., Providence 1, R. I.

**Shur-Shake Vibrator Screens**—Iowa Manufacturing Co., 916 16th St., N.E., Cedar Rapids, Iowa.

**Silverlink Roller Chains, Sprockets for Conveyors, Elevators and Power Transmission**—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

**Silverstreak Silent Chain Drives**—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

**Simplex Belt Conveyor Carriers**—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

**Simplicity Gyrating Screens and Dewatering Wheels**—Simplicity Engineering Co., 213 S. Oak, Durand, Mich.

**Sincolube Greases**—Sinclair Refining Co., 630 5th Ave., New York, N. Y.

**Sinden Box Car Loaders**—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

**Sirocco Fans**—American Blower Corp., Box 58, Roosevelt Park Annex, Detroit 32, Mich.

**Skinner Calcining Furnaces**—Colorado Iron Works Co., 1624 17th St., Denver 2, Colo.

**Skipulter Shaking Conveyors**—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

**SKF Ball and Roller Bearings, Transmission Appliances**—SKF Industries, Inc., Front St. & Erie Ave., Philadelphia, Penn.

**Skookum Hose (Water, Steam, Suction & Discharge)**—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

**Skulgard Protective Hats**—Mine Safety Appliances Co., Bradfok, Thomas & Meade Sts., Pittsburgh 8, Penn.

**Sluggo Crushers and Pulverizers**—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo.

**Sly Dust Collectors**—The W. W. Sly Manufacturing Co., 4700 Train Ave., Cleveland 2, Ohio.

**Smith Mixers**—T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis.

**Smith-Mobile Truck Mixers and Agitators**—T. L. Smith Co., 2835 N. 32nd St., Milwaukee, Wis.

**Solvay Calcium Chloride**—Solvay Sales Corp., 40 Rector St., New York 6, N. Y.

**Southern Woven Asbestos Brake and Transmission Lining**—Treated Cotton Brake and Transmission Lining—Southern Friction Materials Co., P. O. Box 1475, Charlotte 1, N. C.

**Space-Saver Lift Trucks**—Hyster Co., 2938 N. E. Clackamas, Portland 8, Oregon.

**Spartan Sand Suction Hose**—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

**Spearwell Road Machinery**—Spear-Well Machinery Co., Inc., 1832 West 9th St., Oakland, Calif.

**Speed Star Drilling Machines**—The Star Drilling Machine Co., 475 Washington St., Akron 11, Ohio.

**Speeder Shovels, Cranes, Draglines, Pull Shovels, Trailers, Pile Drivers, Trench Hogs**—Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.

**Speedline Portable Asphalt Plants**—Iowa Manufacturing Co., 916 16th St., N. E., Cedar Rapids, Iowa.

**Speed-O-Matic Shovels, Draglines, Cranes, Pile Drivers, Trench Hoes**—Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.

**Speedomax Recorders**—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

**Speed-Set Hydraulic Adjustment for Gyrotory Crushers**—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

**Spiralweave Cables**—The Okonite Co., Passaic, N. J.

**Spray Mix Refractory Coating**—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

**SS Dryers**—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

**SS-Plus Chain**—Link-Belt Co., 220 S. Belmont Ave., Indianapolis 6, Ind.

**SSS Conveyor Belting**—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

**S.S. Red Ring Dredging Sleeves**—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

**Sta-Kleen Vibrating Screens**—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

**Standard Diesel Fuel, Fuel Oil, Gasoline**—Standard Oil Co. of California, 225 Bush St., San Francisco 20, Calif.

**Standard Hose, Packing**—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

**Standard Steel Products**—Standard Steel Corp., 5001 Boyle St., Los Angeles, Calif.

**Star Refractory Brick**—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

**Static-Safety V-Belts**—Gates Rubber Co., 999 Broadway, Denver 17, Colo.

**Sta-Tru Wire Screen or Cloth**—Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis, Mo.

**Stearns Magnetic, Magnetic Pulleys and Separators**—Stearns Magnetic Manufacturing Co., 675 S. 28th St., Milwaukee 4, Wis.

**Steel Cable V-Belts**—Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

**Steelcar Industrial Cars**—Pressed Steel Car Co., Inc., Industrial Div., 2500 Koppers Bldg., Pittsburgh 30, Penn.

**Steelflex Couplings**—The Falk Corp., 3001 W. Canal, Milwaukee 8, Wis.

**Steelgrip Belt Lacing, Gear Pulleys**—Armstrong-Bray & Co., 5364 Northwest Highway, Chicago 30, Ill.

**Stellite Special Alloy Castings and Welding Rod for Hard-Facing, Iron-Base Alloy Hard Facing Rod, Cutting Tools**—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

**Stellite 98 M2 Cutting Tools**—Haynes Stellite Co., Harrison & Lindsay Sts., Kokomo, Ind.

**Sterling Hoists, Pumps**—Sterling Machinery Corp., 405-13 Southwest Blvd., Kansas City, Mo.

**Sterling Motor Trucks**—Sterling Motor Truck Co., Inc., 2021 S. 54th St., Milwaukee, Wis.

**Stirling Boilers**—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

**Stonetex Concrete Paint**—Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.

**Stonewall Asbestos Cement Board**—The Ruberoid Co., 500 Fifth Ave., New York, N. Y.

**Stonewall Air Hose**—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

**Stoodie Hard Facing Alloy**—Stoodie Co., 1134 W. Slauson St., Whittier, Calif.

**Stoodie Hard Facing Alloy**—Stoodie Co., 1134 W. Slauson St., Whittier, Calif.

**Stoodie Self Hardening Hard Facing Alloy**—Stoodie Co., 1134 W. Slauson St., Whittier, Calif.

**Straight-Line Crusher Plants**—Grundler Crusher & Pulverizer Co., 2915 N. Market St., St. Louis, Mo.

**Straub-Universal Concentrating Tables**—Straub Manufacturing Co., 507 Chestnut, Oakland, Calif.

**Streamaire Air Conditioning Units**—Young Radiator Co., 709 S. Marquette St., Racine, Wis.

**Stuart Shovels, Spades, Scoops**—Wood Shovel & Tool Co., Roosevelt & Clark Sts., Piqua, Ohio.

**Sunex Securityflex Portable Cord & Cable (electrical)**—Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.

**Sunset Conveyor & Elevator Belting & Hose (Water, Steam, Suction & Discharge)**—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

**Super-Durabelt Conveyor Belt**—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

**Superduty Concentrating Tables**—The Deister Concentrator Co., 915 Glasgow Ave., Fort Wayne, Ind.

**Super-Everware Conveyor Belt**—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

**Superior Bodies, Flooring, Hoists, Perforated Metal, Tanks and other Steel Products**—Superior Metal Products, Inc., 1819 S. Branson St., Marion, Ind.

**Superior Diesel Engines**—The National Supply Co., P.O. Box 899, Toledo, Ohio.

**Superior Jaw Crushers**—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

**Super Jaw Jaw Crushers**—Grundler Crusher & Pulverizer Co., 2915 N. Market St., St. Louis, Mo.

**Super-Loy Wire Screen or Cloth**—Ludlow-Saylor Wire Co., 634 S. Newstead Ave., St. Louis, Mo.

**Supermal Buckets, Chains**—The Jeffrey Manufacturing Co., 935 N. 4th St., Columbus 16, Ohio.

**Super-Master Belting**—The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., 61 Willett St., Passaic, N. J.

**Super-Oilite Bearings & Cores, Bar & Plate Stock**—Chrysler Corp., Amplex Div., 6501 Harper Ave., Detroit 11, Mich.

**Super-Sluggo Crushers & Pulverizers**—Williams Patent Crusher & Pulverizer Co., 2701 N. Broadway, St. Louis 6, Mo.

**Super Tandem Portable Rock Plants**—Iowa Manufacturing Co., 916 - 16th St., N.E., Cedar Rapids, Iowa.

**Supreme Hammer Mills**—Grundler Crusher & Pulverizer Co., 2915 N. Market St., St. Louis, Mo.

**Supremus Conveyor Belts**—Robins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

**Sure-Prime Pumps**—Jaeger Machine Co., 550 W. Spring St., Columbus 16, Ohio.

**Surfaceweld Arc Welding Electrode**—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

Swing Sledge Hammer Mills—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Sykes Herringbone Gears and Reducers—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Symetro Gearboxes—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Synchro-Operator Automatic Motor or Generator Synchronizing Control—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Synchro-Valve Diaphragm Control Valve—The Bristol Company, Waterbury 91, Conn.

Synflow Concrete Coating & Synthetic Rubber Lining—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Syntron Vibrators—Syntron Co., 450 Lexington Ave., Homer City, Penn.

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Tampitite Special Dynamite Cartridge—Hercules Powder Co., 900 Market, Wilmington, Del.

Tank Type Belt Conveyor Trippers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Taylor Spiral Welded and Riveted Pipe—Taylor Forge & Pipe Works, Box 485, Chicago, Ill.

Taylor Forge Forged Steel Flanges—Taylor Forge & Pipe Works, Box 485, Chicago, Ill.

TDA Portland Cement—Dewey & Almy Chemical Co., 62 Whittmore Ave., Cambridge 40, Mass.

Teco Steel Dump Bodies—Truck Equipment Co. Inc., 1791 Fillmore Ave., Buffalo, N. Y.

Tell-Board Bulletin Boards—Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penn.

Tellvel Automatic Storage Controls—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Telamith Belt Conveyors, Bucket Elevators, Cone Crushers, Gyraseph Crushers—Smith Engineering Works, 532 E. Capitol Dr., Milwaukee, Wis.

Ten-Oil Oils—Sinclair Refining Co., 630 5th Ave., New York, N. Y.

Tensile Belt Belting Cloth—Newark Wire Cloth Co., 351 Vernon Ave., Newark 4, N. J.

Tensitite Chute Lining—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Texdrive V-Belt Sheaves—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Texiron V-Belt Sheaves—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Texrope V-Belt Drives, Sheaves, V-Belts—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Textsteel V-Belt Sheaves—Allis-Chalmers Manufacturing Co., 1945 Prodroc St., Milwaukee, Wis.

Thermo-Humidigraph Combination Temperature & Humidity Recorder—The Bristol Company, Waterbury 91, Conn.

Thermoid Transmission Belting, V-Belts, Conveyor and Elevator Belting, Hose, Packings—Thermoid Rubber, Division of Thermoid Co., Whitehead Rd., Trenton 6, N. J.

Thermolith Refractory Mortar—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Thermomill Mills—Hardinge Co., Inc., 240 Arch St., York, Penn.

Thermoverter Thermal Converter for use with Potentiometers & Millivoltmeters for Measuring A-C Electrical Power—The Bristol Company, Waterbury 91, Conn.

Thor Drill Bits, Hose Couplings, Drilling Steel & Accessories, Electric Hammers, Hols, Pneumatic Drills—Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill.

Thor Fire Brick—Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.

Thor Transmission Belt—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Thornton Four-Rear-Wheel-Drives & Automatic Locking Differentials—Thornton Tack Co., 8701 Grinnell Ave., Detroit 13, Mich.

Thoro-Mix Self Contained Single Paddle Mixers—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Thrustfire Centrifugal Pumps—Pennsylvania Pump & Compressor Co., Easton, Penn.

Tiger Brand Wire Rope & Fittings—American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio.

Tiltadozer Dozers—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Timang Manganese Nickel Steel Welding Rod—Taylor-Wharton Iron & Steel Co., High Bridge, N. J.

Timken Tapered Roller Bearings, Steel, Seamless Steel Tubing, Rock Bits—The Timken Roller Bearing Co., Canton 6, Ohio.

Tirax Drying and Grinding Mills—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Tirex Cables—Simplex Wire & Cable Co., 79 Sidney St., Cambridge 39, Mass.

Tisco Manganese and Alloy Steel Castings—Taylor-Wharton Iron and Steel Co., High Bridge, N. J.

Titan Electric Hoists—Detroit Hoist & Machine Co., 8214 Morrow Ave., Detroit, Mich.

Titan Helical Reducers—Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.

Tobin Bronze Welding Rod—The American Brass Co., 2114 Meadow, Waterbury 88, Conn.

Toledo Scales—Toledo Scale Co., Telegraph Rd., Toledo 12, O.

Toledo-Chronoflo Conveyor Scales—Builders—Providence, Inc., Div. of Builders Iron Foundry, 9 Coddling St., Providence 1, R. I.

Ton-Cap Screen Cloth—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Tournacrine Cranes—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Tournapull Earth Movers—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Tournarope Rope—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Tournatrailers Wagons—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Tournaweld Welding Trucks—R. G. LeTourneau, Inc., 220 Grant St., Peoria, Ill.

Track-Link Plates—Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio.

Trailmobile Trailers—The Trailer Company of America, 31st & Robertson Ave., Cincinnati, Ohio

Transport Truck Mixers—Concrete Transport Mixer Co., Inc., 650 Rosedale Ave., St. Louis 12, Mo.

Traveler Cranes and Shovels—The Byers Machine Co., Ravenna, Ohio.

Travelmix Bituminous Mixing Plants—Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Traxcavator Tractor—Mounted Shovels—Trackson Co., 3333 S. Chase Ave., Milwaukee 1, Wis.

Tri-Clad Electric Motors—General Electric Co., 1 River Rd., Schenectady, N. Y.

Tricoeal Waterproofing—American Fluoresit Co., Inc., 635 Rockdale, Cincinnati 29, Ohio.

Trident Water & Liquid Meters—Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.

Triple-A Protective Coatings for Metal, Concrete, Stucco, Wood, etc.—Quigley Co., Inc., 527 5th Ave., New York 17, N. Y.

Trix Wet Separators—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Trojan Explosives—Trojan Powder Co., 17th N. 7th St., Allentown, Penn.

Truck Engineering Trailers—Truck Engineering Corp., 1285 W. 70th St., Cleveland, Ohio.

Truckmaster Motor Truck Scales—Toledo Scale Co., Telegraph Rd., Toledo 12, Ohio.

Truckstell All Equipment—Truckstell Mfg. Co., 1872 Union Commerce Bldg., Cleveland, O.

Truclifta Lift Trucks—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Tructiers Lift, Tilting and Tlering Trucks—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Tructractors Load Carrying Trucks and Tractors—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Trucure Curing for Concrete—Truseon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.

Truline Rake Classifiers—Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Truflux V-Belts—The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

Trukbukit Hoists and Buckets—Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Truss-Frame Belt Conveyor Carrier—Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Truxmore Third Axles for Motor Trucks—Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y.

Tubex Quarry Blasting Unit—Independent Explosives Co., 455 Leader Bldg., Cleveland 14, Ohio.

Tubular Spray Dryers, Dispersion Dryers—Western Precipitation Corp., 1016 W. 9th St., Los Angeles 15, Calif.

Tufalloy Abrasion-Resisting Steel—H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.

Tugger Electric Hoists—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Tu-Line Hose—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Tulasa Truck Winches—Truck Equipment Co., Inc., 1791 Fillmore Ave., Buffalo, N. Y.

Tung-Alloy Hard Facing Alloy—The Resisto-Loy Co., 127 Baylis St., S.W., Grand Rapids 7, Mich.

Tuveborium Hard Facing Alloy—Stoody Co., 1134 W. Slauson St., Whittier, Calif.

Twin-Disc Clutches & Couplings—Link-Belt Co., 300 W. Pershing Rd., Chicago 9, Ill.

Twin Dryer Asphalt Plants—Universal Engineering Corp., 625 C Ave. N.W., Cedar Rapids, Iowa.

Twinveyor Portable Electric Conveyors—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Twinweld Hose—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Two-In-One Hammer Mills—Gruendler Crusher & Pulverizer Co., 2915 N. Market St., St. Louis, Mo.

"Two-Tone" Welding Method of Hard Surfacing—The Resisto-Loy Co., 127 Baylis St., S.W., Grand Rapids 7, Mich.

Tycol Oils and Greases—Tide Water Associated Oil Co., 17 Battery Pl., New York 4, N. Y.

Ty-Lab Tester Sieve Shaker—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Tyler-Niagara Mechanical Vibrating Screens—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Ty-Loy Screen Cloth—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Type B Pulverizers—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Type E Pulverizers—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Type 400 Electric Screens—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Type H Stirling Boilers—The Babcock & Wilcox Co., 85 Liberty St., New York 6, N. Y.

Ty-Rock Mechanical Vibrating Screens—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Ty-Rod Screen Cloth—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Ty-Speed Vibrators—The W. S. Tyler Co., 3615 Superior St., Cleveland 14, Ohio.

Tyson Cageless Tapered Roller Bearings—Tyson Bearing Corp., Massillon, Ohio.

U

Unax Combined Kilns and Coolers—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Union Portable Belt Conveyor—Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Unidan Compartment Mills—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Uni-Kom Compartment Mills—F. L. Smith & Co., 60 East 42nd St., New York 17, N. Y.

Union Wire Rope—Allied Steel Products, Inc., 1721 N. B. C. Bldg., Cleveland 14, Ohio.

Union-Formed Wire Rope—Union Wire Rope Corp., 21st and Manchester, Kansas City, Mo.

Union Ordinary Wire Rope—Union Wire Rope Corp., 21st and Manchester, Kansas City, Mo.

Unit Belt Conveyor Carrier—Stephens-Adamson Mfg. Co., 7 Ridgeway Ave., Aurora, Ill.

Unit Hose—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Unitact Relay for Close Control of Temperature With Bristol's Tyromaster—The Bristol Company, Waterbury 91, Conn.

Unitair Compressors—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

U. S. All Rubber Goods—U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.



Unitized Crushing Plant—Iowa Mfg. Co., 916 16th St. N. E., Cedar Rapids, Iowa.

Universal Conveyor Belts—Robbins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Universal Gear Oil—The Texas Co., 135 East 42nd St., New York 17, N. Y.

Universal Jaw Crushers, Pulverizers, Roll Crushers—Universal Engineering Corp., 625 C Ave., N. W., Cedar Rapids, Iowa.

Universal Vibrating Screens—Universal Vibrating Screen Co., Deane Blvd. & St. Paul R. R., Racine, Wis.

Univibe Vibratory Riddles—Universal Vibrating Screen Co., Deane Blvd. & St. Paul R. R., Racine, Wis.

UP Vibrating Screens—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

U-R-Lite Enclosed Electric Circuit Breakers, I-T-E Circuit Breaker Co., Elizabeth & Hamilton Sts., Philadelphia 30, Penn.

Ura Lubricating Oil—The Texas Co., 135 East 42nd St., New York 17, N. Y.

USS Alloys—Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Ala.

USS All Products—Carnegie-Illinois Steel Corp., Carnegie Bldg., Pittsburgh 30, Penn.

USS American Wire Fencing—American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio.

USS American Wire Fencing—Tennessee Coal, Iron & Railroad Co., Birmingham 2, Ala.

USS Blue Bonnet Bag Ties—Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham 2, Ala.

USS Cyclone Wire Belting and Metal Belting—Cyclone Fence Division, American Steel & Wire Co., Waukegan, Ill.

USS National Boiler Tubes—National Tube Co., Frick Bldg., Pittsburgh, Penn.

Utaley Steel Castings and Liners—The Elmco Corp., Salt Lake City 8, Utah.

Utilitrac Carrying and Tying Fork Trucks—Clark Tractor Co., 114 Springfield Pl., Battle Creek, Mich.

Utility Air Hoists—Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Utility Blue Cement Colors—Utility Color Co., 377-99 Frelinghuysen Ave., Newark 5, N. J.

Utility Green Cement Colors—Utility Color Co., 377-99 Frelinghuysen Ave., Newark 5, N. J.

V

Vanderwerp recuperators—Manitowoc Engineering Works, Manitowoc, Wis.

Vapocarb Electric Furnaces—Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Penn.

Vapotester—Combustible Gas Indicator—Davis Emergency Equipment Co., Inc., 45 Halleck St., Newark 4, N. J.

Vari-Pitch Adjustable Speed V-Belt Drives & Sheaves—Allis-Chalmers Manufacturing Co., 1945 Proctor St., Milwaukee, Wis.

Variapred Rock Spreader—Iowa Manufacturing Co., 916 16th St., N. E., Cedar Rapids, Iowa.

Vari-Stroke Ore Feeders—Morse Bros. Machinery Co., 2900 Broadway, Denver 1, Colo.

Varnon Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Veeget Nozzles—Spraying Systems Co., 4021 W. Lake St., Chicago 24, Ill.

Veelos Adjustable V-Belting, Elevator Belting—Manhelm Manufacturing & Belting Co., Manhelm, Penn.

Velox Grease—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Ventura Exhaust Fans—American Blower Corp., Box 58, Roosevelt Park Annex, Detroit, Mich.

Venturafin Unit Heaters—American Blower Corp., Box 58, Roosevelt Park Annex, Detroit, Mich.

Venturi Flow Meters—Builders-Providence, Inc., Div. of Builders Iron Foundry, 9 Coddling St., Providence 1, R. I.

Vertiflow Unit Heaters—Young Radiator Co., 709 S. Marquette St., Racine, Wis.

Vertivent Unit Heaters, Ventilators—Young Radiator Co., 709 S. Marquette St., Racine, Wis.

Vibra-Flow Conveyors, Feeders, Feeder Machines—Syntron Co., 450 Lexington Ave., Homer City, Penn.

Vibracop Vibrating Block Machines—Besser Manufacturing Co., Alpena, Mich.

Vibrator Vibrating Screens—Stephens-Adamson Manufacturing Co., 7 Ridgeway Ave., Aurora, Ill.

Vibrator Electric Vibrating Screens, Dryers, Feeders, Coolers, Conveyors—The Jeffrey Mfg. Co., 935-99 N. 4th St., Columbus 16, Ohio.

Vibrex Screens—Robbins Conveyors Inc., 270 Passaic Ave., Passaic, N. J.

Victor Balata Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

Victor Conveyor & Elevator Belting—Pioneer Rubber Mills, 353 Sacramento St., San Francisco 11, Calif.

Vike Graphite Plastic—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Viking Fire Brick—Mexico Refractories Co., Crie & Love Sts., Mexico, Mo.

Vilo Motor Oils—Keystone Lubricating Co., 21st & Clearfield Sts., Philadelphia 32, Penn.

Vinsol Resin Grinding Aid and Cement Additive—Hercules Powder Co., 900 Market, Wilmington, Del.

Vitalic Mechanical Rubber Goods—Continental Rubber Works, 1902 Liberty St., Erie, Penn.

V. R. D. Variable Roller Drive Speed Transmission—Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Penn.

Vulcan Kilns, Coolers, Dryers, Calciners—Vulcan Iron Works, 730 S. Main St., Wilkes-Barre, Penn.

Vulco Steel Single Groove V-Belt Sheaves—The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

W

Wabby Weave Woven Wire Screen Cloth—HarriSteel Products Co., 420 Lexington Ave., New York 17, N. Y.

Wallabout Hose and Belting—Hewitt Rubber Corp., 240 Kensington Ave., Buffalo, N. Y.

Wall Manila Quarry Drilling Cable—Wall Rope Works, Inc., 48 South St., New York 5, N. Y.

Walsh Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Walsh Plastic Furnace Lining Plastic Fire Brick—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Warco Fire Brick, Kiln Liners—Walsh Refractories Corp., 4070 North First St., St. Louis 7, Mo.

Warco Road Machinery—W. A. Riddell Corp., Warren St., Bucyrus, Ohio.

Warco XXT Fire Brick, Kiln Liners—Walsh Refractories Corp., 4070 N. First St., St. Louis 7, Mo.

Waukesha Internal Combustion Engines—Waukesha Motor Co., P. O. Box 379, Waukesha, Wis.

Waytrol Precision Weighing Machine—The Jeffrey Manufacturing Co., 935 N. 4th St., Columbus 16, Ohio.

Weartex Interwoven Cotton Conveyor and Elevator Belting—Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.

Wearweld Arc Welding Electrode—Lincoln Electric Co., 12818 Colt Rd., Cleveland 1, Ohio.

Weber Batch Type Lime Hydrator—Arnold & Weigle, Inc., Woodville, Ohio.

Weigh-Flow Gravimetric Feeders—Syntron Co., 450 Lexington Ave., Homer City, Penn.

Weighman Automatic Scale Beam—Merrick Mfg. Co., 180 Autumn St., Passaic, N. J.

Weightometer Conveyor Scales—Merrick Scale Manufacturing Co., 180 Autumn St., Passaic, N. J.

Weinig Flotation Machines—Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.

Weidels Fittings for Pipe Welding—Taylor Forge & Pipe Works, Box 485, Chicago, Ill.

Welding Jelly Arc Weld Preparation—Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

Wellman Cardumpers, Mechanical Gas Producers, Material Handling Equipment, Mine Hoists—Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio.

Wellman-Galusha Clean Gas Generators—Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio.

Wellman-Galusha Clean Gas Generators—Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio.

Wemco Agitators, Classifiers, Feeders, Hydro-separators, Pumps, Samplers, Thickeners—Western Machinery Co., 760 Folsom St., San Francisco, Calif.

Western Black Powder & Caps (Blasting, Electric, Delay)—Equitable Powder Mfg. Co., East Alton, Ill.

Wharton Cylinders for High Pressure Gases, Railway Trackwork—Taylor-Wharton Iron and Steel Co., High Bridge, N. J.

Whirlpool Agitators—H. K. Porter Co., Inc., 1932 Oliver Bldg., Pittsburgh, Penn.

Whirlwind Centrifugal Air Separators—Sturtevant Mill Co., 103 Clayton St., Dorchester, Boston 22, Mass.

Whitcomb Locomotives—The Whitcomb Locomotive Co., Rochelle, Ill.

White Ring Dredging Sleeves—Goodall Rubber Co., Inc., 5 So. 36th St., Philadelphia 4, Penn.

Wilbert Burial Vault Forms—Wilbert W. Haase Co., 1015 Troost Ave., Forest Park, Ill.

Wilfley Gravity Concentrating Tables—Morse Bros. Mch. Co., 2900 Broadway, Denver 1, Colo.

Wilfley Gravity Concentrating Tables—The Mine & Smelter Supply Co., P. O. Box 5270, Terminal Annex, Denver, Colo.

Williams Clamshell & Dragline Buckets—Wellman Engr. Co., 7000 Central Ave., Cleveland 4, Ohio.

Wilson Shovels, Spades, Scoops—Wood Shovel & Tool Co., Roosevelt & Clark Sts., Plaqu, Ohio.

Wingfoot Belt Dressing, Transmission Belt and Water Hose—The Goodyear Tire & Rubber Co., Inc., 1144 E. Market, Akron, Ohio.

Wiregrip Belt Hooks and Lacers—Armstrong-Bray & Co., 5364 Northwest Highway, Chicago 30, Ill.

Wisconsin Gasoline Engines—Wisconsin Motor Corp., 1910 S. 53rd St., Milwaukee 14, Wis.

WissCo Wire Cloth, Wire Rope and Other Metal Products—Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.

Wonderful Hose—Quaker Rubber Corp., Comly & Milnor Sts., Philadelphia 24, Penn.

Won Way Cars and Trailers—Easton Car & Construction Co., Box 270, Easton, Penn.

Wood Gas Producers, Sand Spun Pipe, C. I. Fittings, Valves—R. D. Wood & Co., 400 Chestnut St., Philadelphia, Penn.

Wood Shovels, Spades, Scoops—Wood Shovel & Tool Co., Roosevelt & Clark Sts., Plaqu, Ohio.

Woodford Haulage System and Accessories—The Woodford Engr. Co., 77 W. Washington St., Chicago 2, Ill.

Woodland Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Wriget Nozzles—Spraying Systems Co., 4021 W. Lake St., Chicago 24, Ill.

Wylam Acid Refractory Brick—Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Penn.

Y

Yellow Strand Wire Rope—Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis, Mo.

York Lime Kilns, Rotary Dryers—McGann Manufacturing Co., P. O. Box 1187, York, Penn.

Youngstown Limit Stop for AC-DC Cables—The Electric Controller & Manufacturing Co., 2700 E. 79th St., Cleveland 4, Ohio.

Z

Zeph-Air Compressors—Sullivan Machinery Co., Woodland Ave., Michigan City, Ind.

Zephyrcrane Pneumatic Tired Cranes—Link-Belt Speeder Corp., 301 W. Pershing Rd., Chicago 9, Ill.

Zilicon Integral Waterproofing—Truscon Laboratories, Inc., Caniff & Grand Trunk R. R., Detroit 11, Mich.

Zonax Coolers—F. L. Smidth & Co., 60 East 42nd St., New York 17, N. Y.

Zonolite Insulating Material—Universal Zonolite Insulation Co., 135 S. La Salle St., Chicago 3, Ill.



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**L**ARGE size rock and ore from primary crushers, coal in underground conveyors, and sharp or highly abrasive material are severe services for conveyor belting. Super-Excello Reprene is constructed with special synthetics which provide superiority in wear and cut resistance. Oil- and heat-resistant qualities provide further life under many severe service conditions. Weight

of fabric, number of plies and thickness of cover are established by load requirements and type of application. Super-Excello Reprene represents the highest development in conveyor belting and will give the utmost in long, economical service under extreme punishment. Ask your Republic Distributor about Super-Excello Reprene on your tough materials-handling jobs.

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DIVISION

LEE RUBBER & TIRE CORPORATION

YOUNGSTOWN 1, OHIO

REPUBLIC INDUSTRIAL PRODUCTS  
YOUNGSTOWN, O.



LEE DELUXE TIRES AND TUBES  
CONSHOHOCKEN, PA.

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PARTICIPANTS IN THE  
OWNERSHIP AND OPERATION  
OF  
NATIONAL SYNTHETIC RUBBER  
CORPORATION

AMERICA IS  
*Built with Aggregate!*



Ewing Galloway Photo

*The Highway  
That goes  
To sea...*

KEY  
WEST

**Cedarapids**

Built by  
IOWA

### THE IOWA LINE

of Material Handling Equipment  
Includes

ROCK AND GRAVEL CRUSHERS  
BELT CONVEYORS—STEEL BINS  
BUCKET ELEVATORS  
VIBRATOR AND REVOLVING  
SCREENS  
STRAIGHT LINE ROCK AND  
GRAVEL PLANTS  
FEEDERS—TRAPS  
PORTABLE POWER CONVEYORS  
PORTABLE STONE PLANTS  
PORTABLE GRAVEL PLANTS  
REDUCTION CRUSHERS  
BATCH TYPE ASPHALT PLANTS  
TRAVELING (ROAD MIX)  
PLANTS  
DRAG SCRAPER TANKS  
WASHING PLANTS  
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STEEL TRUCKS AND TRAILERS  
KUBIT IMPACT BREAKERS

Stretching apparently endlessly out to sea runs the Key West Highway Viaduct, one of the world's great engineering feats. Every foot of its more than one hundred and thirty miles is strong enough to withstand nature's most destructive forces because it's built primarily of aggregate.

On highways, airports, dams and other permanent structures which also require enormous quantities of aggregate, the difference of even a few cents per ton in material costs becomes highly important. Because of this, Iowa engineers are constantly striving to improve the Cedarapids line to provide every possible advantage for its users to produce better products at still lower cost.

No matter what kind of a job you are supplying material for you'll profit more by using Cedarapids equipment. Iowa is known everywhere as headquarters for aggregate producing and crushing equipment and asphalt plants.

**IOWA MANUFACTURING COMPANY**  
CEDAR RAPIDS, IOWA





## Converting for Postwar Demands

Producers planning many improvements

OUR LETTER to subscribers disclosed that all types of equipment and machinery basic to production and the re-fitting of plants for servicing postwar markets will be in demand. We considered this to be a foregone conclusion so our inquiry was directed, not to receive a list of machinery to be installed, but to determine what basic processing changes are to come.

Much information on types of installations contemplated is embodied in the article on specifications, since we sought information on postwar standards which, of course, directly affect methods of processing. But it is of interest that 95 percent of the letters received, by actual count, indicated that installations of various types are to be made when government restrictions are rescinded.

It is sufficient to mention here that the list is a long one, comprising practically every kind of machinery used, and new plants, in some cases, bearing out the predictions in the postwar study completed by Rock Products in 1943. All the basic operations—excavation, haulage, crushing and screening, washing, conveying and elevating, batching, storage, etc., are coming in for consideration.

### Crushed Stone

Excerpts from some of the most interesting letters received are printed here so that producers can become familiar with the trends and thinking throughout the industry.

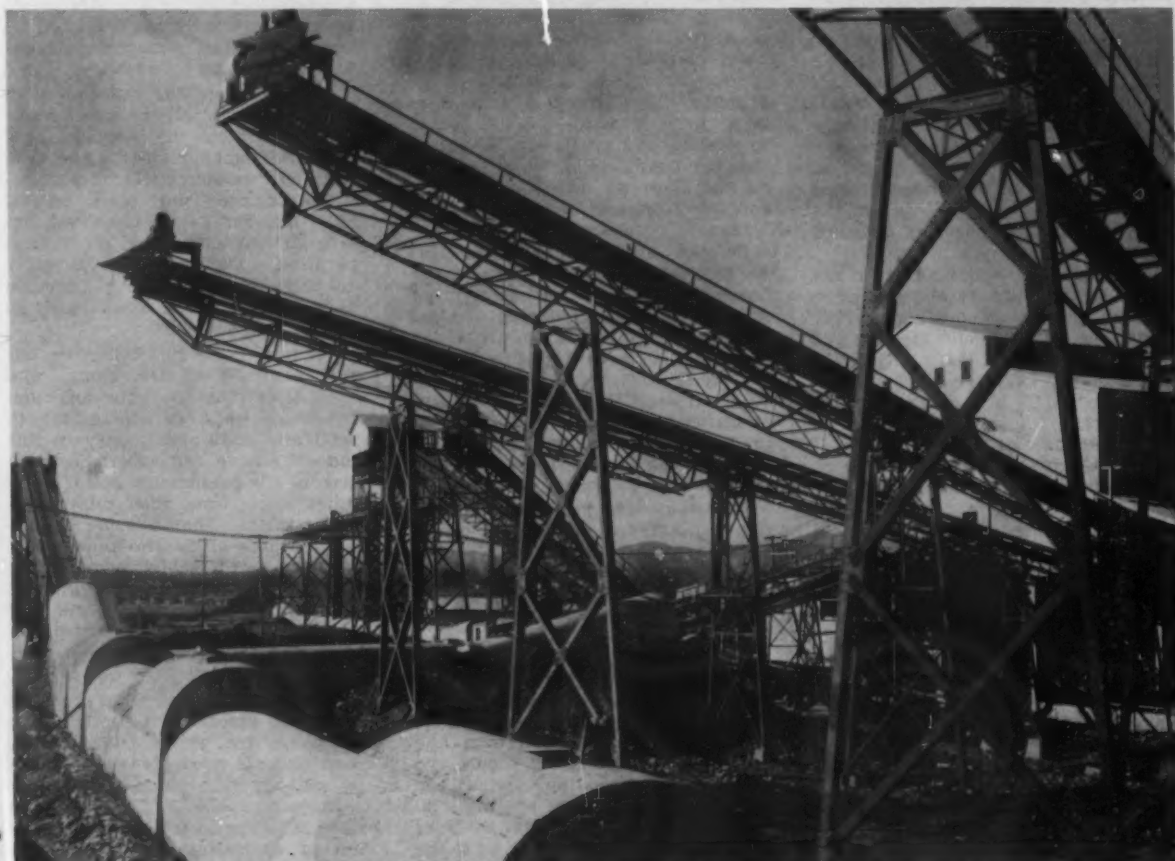
From West Virginia we received the following comments from a crushed stone producer:

"We contemplate purchasing im-

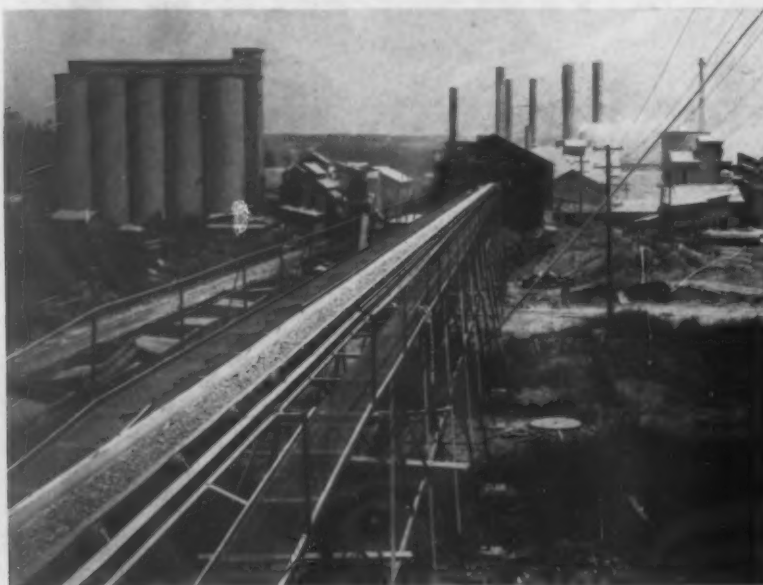
mediately a 30-x36-in. jaw crusher, and an electric vibrating feeder for same; a 100-ft., 24-in. belt conveyor, and a 5-x10-ft. double deck vibrating screen. We will be in the market immediately after the war for trucks and probably a 2-cu.-yd. power shovel. The jaw crusher, conveyor belt, and screen are for increasing the production of high calcium limestone at our limestone mine where the primary crusher now is a 7½ gyratory. This crusher will have a capacity of 150 tons per hour, and will be served by two one-yard electric shovels."

Another crushed stone producer, from Virginia, writes a bit pessimistically, due to a local condition in his area, as follows:

"We are planning very few improvements immediately after the



Construction view of gravel plant that furnished aggregates for Shasta Dam. Tunnel conveyors such as this one are becoming more common in large aggregates plants



Long conveyor belt for transporting stone from quarry at National Cement Co., Ragland, Ala., is typical of recent major conveyor installations

war. We are not sure we are going to have good labor conditions immediately after the war, as there are several large industries planning to locate near our plant. We fear this will make the labor situation unfavorable for quarry work as roadside competition holds down the price of stone for highway use and I am sure it will appear again as soon as economic conditions become normal."

An Indiana producer of crushed stone wrote:

"Following the war we plan to replace our primary gyratory crusher with a new 36-in. crusher of the same type. This should increase our production by one-third. No new markets for limestone are anticipated for 1945 although it is expected that demand for AAA limestone will increase."

A northern California producer of crushed stone who emphasized the need for more re-crushing and screening capacity, in his comments on specifications, remarked further:

"Additional screening capacity, for the finer sizes in particular, are indicated as before mentioned. This is in contemplation for this plant, if priorities and permission are obtainable, and there comes an opportunity to install at least two shaker screens during the winter months."

#### Fines for Bituminous Concrete

A Texas producer of crushed stone wrote interestingly on the related subjects of specifications and processing. His remarks should be of interest to many producers of aggregates for bituminous mixes and are as follows:

"Several years ago we added a plant for the asphalt coating of stone to the crushed stone end of the plant. Still later we arranged to wash part of the crushed stone we produce. At the beginning we bought outside sand for use as fines in asphaltic concrete. After we got to washing stone we installed a drag type sand tank. Now we are getting all the fines we need for asphaltic concrete from our own production."

"Many problems have been encountered in the making of this washed sand. What is wanted in the finished product is a maximum of fines between the 100 mesh and the 40 mesh. The sand we are today producing is running roughly 40 percent 10 by 40 mesh, 40 percent 40 by 80 mesh and 15 percent 80 by 200 mesh, with the remaining 5 percent made up about equally of minus 200-mesh and plus 10-mesh material."

"This sand is being produced from a very dirty feed heavily laden with red clay and for the volume of silt handled we get comparatively little pay; however, what we do get is good clean sand, graded right for our purpose and in sufficient amount for our needs."

"Along with this washed sand we have been using some dry 7-mesh to dust limestone in asphalt mixes. This 7-mesh to dust material carries more of both minus 200-mesh dust and plus 40-mesh grit than it should and we are now installing separating equipment to so process this material that we can take just what we want out of it and let the balance go to the washing plant."

"The foregoing may not be of any interest to you; however, you men-

tioned high percentages of fines in concrete sand and this got me started, as from the beginning our trouble with asphalt sand has been too much minus 200-mesh, too little plus 200-mesh and minus 40-mesh, too much plus 40-mesh and minus 10-mesh."

"As for installations we have in mind the removal of deleterious materials. At the present time that part of the stone discharged by our primary crusher, minus 3-in. in size, is being washed. When, as and if plans now being prepared are carried out, all of the stone discharged by our primary crusher will be washed—then allowed to drain and after that recrushed, rescreened, etc., dry."

"The quarry we are working is a very dirty one and we have convinced ourselves that we can improve salability of our crushed material very materially by washing and do this economically. In fact the installation we propose to make should reduce our labor cost very appreciably and we figure that our overall cost will be less than it now is if changes we are planning on are made."

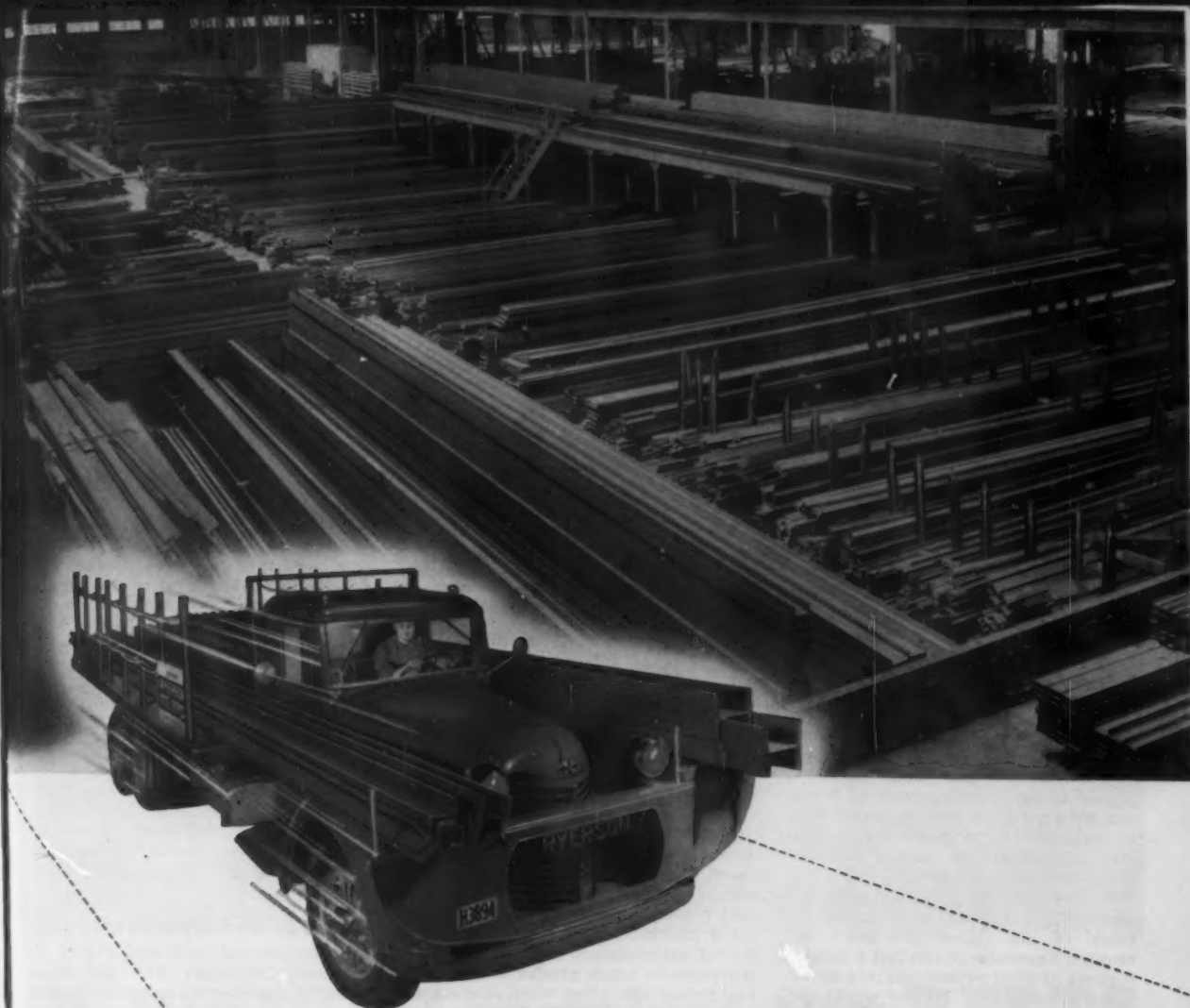
A producer of lime and crushed limestone in the Middle West has issued a challenge to machinery manufacturers in the following:

"We anticipate the installation of at least one and perhaps more reduction crushers for the increased production of smaller sizes. The type of crusher we select will offer possibilities of producing more cubical stone, but our greatest interest lies in high capacity and economical operation. Cubical stone is quite probably desirable, but particle shape, in my opinion, is not nearly so important as low cost."

"We need more dust collectors, but until someone comes along who knows something about the collection of limestone dust, we will hesitate to spend any additional money in this field. We have had experience with three of the presumably better companies, each time with unsatisfactory results. Should some manufacturer come along who knows what he can do and is willing to guarantee results, we would renew our interest for there is considerable need for dust collecting devices, particularly on the part of plants located near residential areas."

A comment from an Ohio producer of crushed limestone is short and to the point. He writes, "We expect, when possible, to increase re-crushing capacity to balance with quarry production capacity." Typical of the continued expansion for the production of agricultural limestone and crushed stone is the remark from an Iowa producer, "We anticipate a

(Continued on page 170)



## STEEL of every kind delivered QUICKLY from STOCK

### *Principal Products*

Bars, shapes, plates, sheets, structurals, tubing, carbon and alloy steel, abrasion-resisting steel, tool steel, drill rod, 4-Way floor plate, shafting, Hi-Bond Reinforcing, etc.

For new construction or equipment, for maintenance or repairs on existing units, for any of hundred and one steel requirements . . . depend on Ryerson Steel-Service.

There are large and complete stocks of almost every kind of steel in your nearby Ryerson plant . . . backed by a nation-wide organization of eleven plants, ready to serve you. We'll gladly work with you on any problem involving supply, application or fabrication. Call Ryerson for quick action on steel.

# RYERSON STEEL

Joseph T. Ryerson & Son, Inc., Steel-Service Plants: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston.





Crushed stone plant constructed by Birmingham Slag Co., to produce aggregates for Douglas Dam, is an example of a "project plant" for heavy tonnages

large crushed stone business after the war and are now looking for a larger crane and intend to install either one or two more crushers at that time."

From Massachusetts, a crushed trap rock producer writes:

"We do expect to make major changes in our plant and equipment as soon as the machines and labor are available. The plans are expected to cover replacement of worn out machinery as well as revamping of methods to cut down production cost. Labor-saving devices will be given first consideration."

During the war, the stoppage of construction activity has resulted in some of the large producers of crushed limestone converting a larger percent of total production into agricultural limestone. In line with that trend we quote the following from a letter by a Kentucky producer:

"We have ordered a 42-x48-in. pulverizer to be driven by a 250-hp. motor, which should more than double our capacity for the production of agricultural limestone and enable us to produce the entire output of the primary crusher to agricultural limestone. This expansion is expected to be complete well in advance of the 1945 season."

### Crushed Granite Operations

A crushed granite producer in the Southeast comments as follows:

"I do not foresee any unusual changes in specifications, but the trend will be to smaller sizes of crushed stone, and this will require considerable recrushing of the excess larger sizes. This will result in greater loss in fines, a reduction in tons per hour, and a corresponding increase in cost."

In further remarks on post-war expansion and employment he offers the following "musts" for post-war industry.

"Industry was not able and should not be expected to give full employment to all workers. Many

veterans will undoubtedly prefer to find employment in industry where their training and experiences in war activities will give them better opportunities than offered in other fields. Industry must establish whatever working hours are necessary to provide reasonable earnings with maximum employment, and labor must co-operate by accepting shorter hours with reasonable pay adjustments to encourage maximum employment.

"Our government can help by making tax adjustments to industries faced with unusual expenses in reconversion, deferred maintenance and other special cases arising from labor shortages and war work. Deferred maintenance in our industry increases in much greater ratio than tax authorities allow when operating at full capacity or when labor is not available to do the work during periods when earnings permit.

"Unless tax structures are modified to permit the retention or setting aside of funds for deferred maintenance while earnings permit or unless tax structures are adjusted to permit greater earnings on the lower volume of business expected post-

war, many industries must forego the proper restoring of plant and equipment or must postpone contemplated post-war business expansion in plant or new products."

### Sand and Gravel Operations

One of the larger sand and gravel companies in Illinois wrote as follows:

"Within a year or so following the defeat of Germany, it is our plan to spend in the neighborhood of \$250,000 in rehabilitating our plants, buying new equipment to replace obsolete and worn out items and streamline our present operations for postwar work."

A sand and gravel producer, operating bucket dredges in Pennsylvania writes that one of its large dredges will be modernized to conform with another dredge that was completely modernized a few years ago.

Another producer of sand and gravel in the same state, also a producer of ready-mixed concrete, had this to say with regard to modernization:

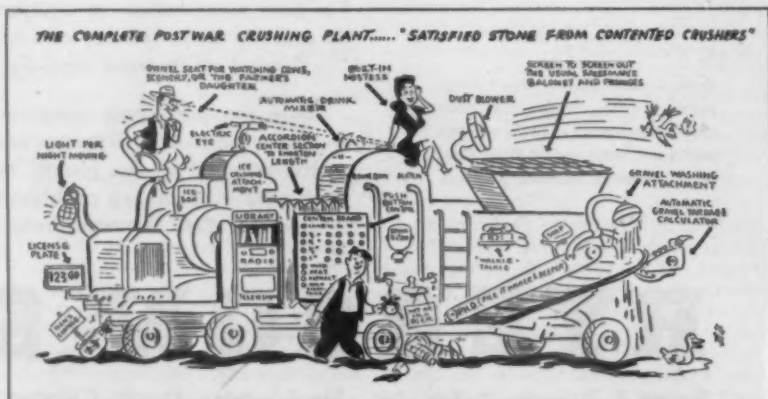
"We will have a moderate run of machinery installations during 1945 to cover some modernization to plants and equipment. These purchases will be made for the manufacture of improved products and to prepare for some upswing in business contemplated during the latter part of the year."

### Far West Operations

A producer of sand and gravel in northern California who has long deferred machinery replacement and plant improvement expresses his position as follows:

"On the question of machinery installations contemplated, very little in the way of new equipment or maintenance work has been done by us during the past few years. This is due to the fact that labor has been practically unobtainable for

(Continued on page 172)



Courtesy Iowa Manufacturing Co.

An artist's conception of a post-war screening and crushing plant



## A *Big* WAR requires *Big* BELTS

Thousands of feet of rubber belting are required by the demands of War. Belts of this size are being constantly manufactured at Quaker's busy plant.

It is belts like these that convey thousands of tons of coal, gravel, sand, cement, crushed stone, concrete or similar products and do it economically, for Quaker Belts are built to give long service, and they do it.

Quaker is maintaining Belt Production at peak figures. When the requirements of War needs Belts, Quaker gives that order the right of way. You would not want it otherwise. Events happening on the vari-

ous battle fronts make it look brighter to that day when production can be devoted 100% to civilian requirements.

Quaker for many years has been most active in experimenting and working with American-made (Synthetic) rubber. In many instances, it has already proven better for certain kinds of work than crude rubber.

For sixty years, Quaker has been manufacturing Quality Industrial Products . . . Belting—Hose—Packings—and Moulded Parts. Regardless of what your rubber problem may be, feel free to consult with us.

*"If there is a way to get it done—Quaker will do it"*

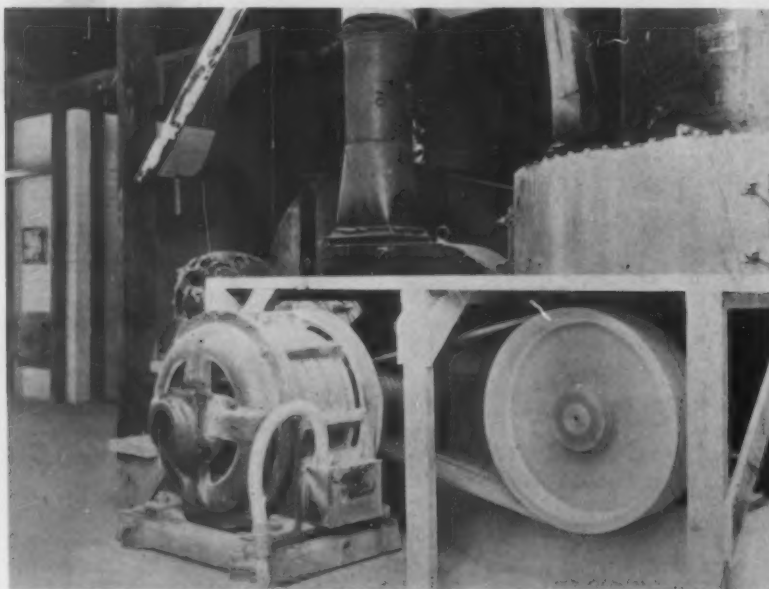
### QUAKER RUBBER CORPORATION

PHILADELPHIA 24, PA. • NEW YORK 7 • CLEVELAND 15 • CHICAGO 16 • HOUSTON 1

Western Territory

QUAKER PACIFIC RUBBER COMPANY • SAN FRANCISCO 5 • LOS ANGELES 21





Roller mill at Utah Lime and Stone Co. is a modern concept of grinding

this purpose, and priority requirements have made the securing of supplies difficult, but principally the urgency and press of government business has been such that we have been compelled to operate continuously, with no possible time out for shutdowns which would permit satisfactory improvement and maintenance work. This latter reason sounds like an incredible condition in our business, something we had never seen before and presume will never see again, but it is a fact nevertheless.

"We have for some time past been preparing a program which will necessitate a considerable amount of replacement and improvement at our plant as well as new development and new construction so as to enable us to more adequately produce and supply the quantities and quality of material required by our customers. This work is vitally necessary due to the fact that during the past few years we have been able to do only the most essential maintenance and replacement work for the reasons previously mentioned, which has created a backlog of replacement, improvement and development of major magnitude. This should be good news for your machinery and equipment friends at any rate."

One of the most interesting letters received, particularly in its references to the fine sand problem, was one from California which stated in part:

"The problem of increasing the fines in the sand around the 50-mesh and 100-mesh size ranges presents a problem of considerable proportions. It will be necessary for our company to change very radically our present

methods of sand production, storage and proportioning plants in order to meet specifications rigidly requiring definite proportions of sand in the finer sizes.

"The production of the sand will have to be carried on by means of classifiers which will divide the total flow into the desired sizes. If too much refinement is required or demanded it will mean that we will have to provide additional bin storage in most of our producing plants. The same situation would then prevail in our proportioning plants some of which have only a limited number of bins.

"An increasing demand for crushed rock for railroad ballast, asphaltic concrete, oil mixtures, etc., has made it necessary to increase our crushing facilities at one of our plants. This plant is also to be improved to the extent of having a new gravel scrubbing, washing, and screening plant. It will be necessary for us to install a scrubber adequate to thoroughly clean gravel having a coating of tightly plastered clay. The scrubber will also have to break down a certain percentage of clay balls coming from clay strata in the sand and gravel deposit.

"Heavy bombers of the Army Air Forces have made it necessary to provide greatly improved landing strips. One of our other plants has been improved to make a crusher run base material to supply material for the sub-base of the bomber runways. Many thousands of tons of this crusher run base have been produced and used at the air fields in this area.

"We have just installed a new primary jaw crusher at a third plant.

This sand and gravel deposit was for many years excavated to a depth of 100 to 150 feet in a dry pit. Recently the water level has raised to about 40 feet in the dry season and to 25 feet in the wet season. Instead of operating as a dry pit using a shovel on the floor of the pit we now have to use a dragline and excavate the material from below the water level.

"Another of our plants during the past year has been given a considerable rebuilding and improving. Additional screens have been installed both on the gravel production and the crushed rock doubling the screening area."

### Mountain States

A producer of sand and gravel and ready-mixed concrete in Utah wrote:

"We have not heard of any intention of federal or state highway officials to specify more fines in sand. Our deposits here have a plentiful supply of minus 100 measurement material and we have never had trouble at this point on the scale. However, our sands are deficient in 14 and 28-mesh sizes and for considerable of our work it is necessary for us to add a fine blending sand, which we obtain at considerable expense. We are therefore very much interested in learning of a feasible method for processing our sand so as to increase the sizes in the intermediate zone.

"We are giving careful consideration at the present to the construction of an efficient washing plant. For the past few years it has not been necessary for us to wash our gravel although we have washed the sand. We are now giving consideration to the construction of a complete plant for washing both sand and gravel, this to include scrubbing equipment, and we are making a study of the various types of this equipment. We will encounter sticky clay layers at various places in our deposit which will require this more thorough treatment. The tremendous demand made upon our metropolitan deposit, growing out of war project construction during the past three years has substantially depleted the better quality material and it is going to be necessary for us to provide more efficient equipment in order to process that which is left."

### Dredging Operations

From Mississippi, where the majority of sand and gravel plants operate hydraulic dredges, we received the following philosophical comments from a leading producer:

"We do not anticipate any drastic machinery changes, but are trying to keep up with all new machinery. In other words, we don't know what is going to happen in the industry but we are trying to keep our eye on the

(Continued on page 174)



## LIME HYDRATE PLANTS—

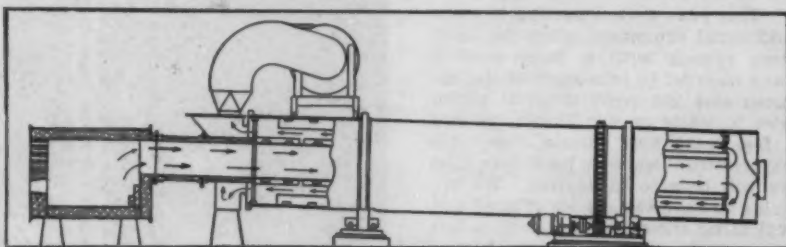
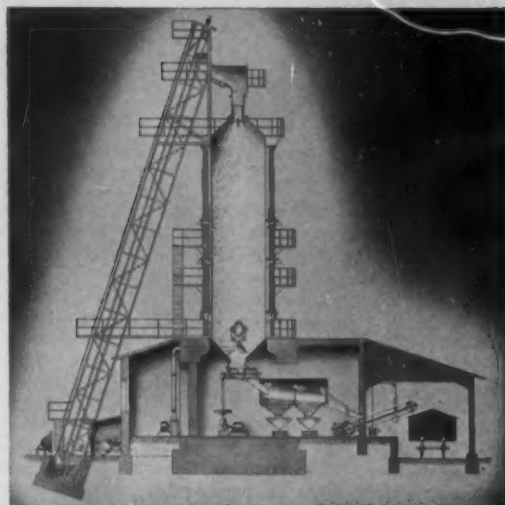


*Stop that loss... Save lime fines*

**KUNTZ GRAVITY SYSTEM OF LIME HYDRATION**—Provides absolute control of the hydration process in a single unit. Saves up to \$1.50 per ton because patented dust control stops all loss of lime fines. Heat of hydration, often wasted, is used to heat water applied to hydrator. The only automatic system of one-man operation giving 100% control of quality and uniformity. Batch or continuous method. Can be applied to any type of hydrate plant.

**YORK DOUBLE SHELL DRYER (Lower Right)**—High thermal efficiency and the resulting economy of operation of the York Dryer is unsurpassed. Double shell allows hot gases to dry and pre-heat the stone by radiation. Gases absorb moisture in inner flue, completing the drying process. Result: high fuel efficiency with resultant fuel economy.

**YORK-KUNTZ AUTOMATIC VERTICAL LIME KILN (Above)**—Here's an automatic kiln that eliminates crushing and assures continuous control. Result: a uniform burn that reaches the absolute peak of fuel efficiency. Features: either mixed feed, coal or gas firing; continuous discharge and continuous feed; adjustable distribution; center load support; center combustion control.



OTHER MCGANN PRODUCTS — LIME PLANTS COMPLETE - HYDRATORS - SHAFT KILNS - ROTARY KILNS - DRYING MACHINERY - TANKS - BINS - GREY IRON CASTINGS - SUGAR MACHINERY - SPECIAL MACHINERY FROM ENGINEER'S DESIGNS

**LIME & HYDRATE PLANTS CO.**

*Associates MCGANN MANUFACTURING COMPANY, York, Pa.*



Industrial sand plant of George F. Pettinos, Inc., Manumasskin, N. J., built in 1944, emphasizes several stages of re-washing sand with clear water at each step and dewatering through hoppers and dewatering pipelines

ball so if it curves we can curve with it. We believe 'know-how' is going to be worth more than anything else in post-war operation and we are holding to our old men and training all the new ones we can. We are keeping up our contacts with our customers whether they are buying or not. We don't expect to make much money during these times but we are trying to stay in the sand and gravel business and keep the public advised of that fact."

From northern Michigan, one of the outstanding producers confined his remarks to the problem of fines in sand as follows:

"Your second paragraph regarding more fines in the 50-mesh and 100-mesh size ranges of sand. We have recognized this fact for several years and we have worked out several methods of retaining these fines.

"This year we are putting in some additional equipment using the sand drag system with a large settling tank in order to take more of the 50-mesh and 100-mesh material which goes to waste on our flume pipe and I feel reasonably certain from past experimental work we have done that we will be able to do this. We are going to have two grades of sand and will blend these two grades on a belt conveyor in order to get the proper gradation."

From Texas, a large producer of sand and gravel writes that he has been too busy supplying orders to think of post-war operations yet. He said:

"Frankly, we do not know what we are going to do, when and how, until we can see a little more clearly the end of the war. We have been so busy for the past four years trying to keep our head above the water and to keep our plants hanging together and, at the same time, supplying a

terrific demand that we have not been able to give too much thought to what is going to happen after the war. For this period I foresee great activity and higher prices for everything, labor being first, of course, and any sort of equipment next."

A producer operating dredging equipment in the Missouri river section said:

"We are confronted with the evident modification of concrete sand which will be required by certain federal agencies. These specifications require much closer grading and the inclusion of material minus 100-mesh, which are likely to prove quite difficult.

"We now plan to meet this by completely rebuilding the classifier equipment on our Missouri river

dredge. In this we hope to be able to remove some of the middle sizes and save more of the minus 100. We are also planning equipment whereby we can blend our Kaw river sand with fine material, which will then meet the specification.

"We are planning to increase the fine crushing equipment at our crushed stone plant as we anticipate a greater use of asphalt paving material which will require finer aggregate."

### Industrial Sand Operations

Several well-known producers of industrial sands mentioned installations definitely planned. Typical of the kinds of installations are the following. A Pennsylvania producer

(Continued on page 204)



Interior of 1944 model industrial sand plant showing rising current classifiers. Muddied water wasted and clear water added in three consecutive stages of classification

# HOW A BUCKET LOADER CUTS COSTS FOR THE CONTRACTOR!



• Any contractor knows that the continuous operation of a bucket loader yields a higher yardage of bulk material at a less cost than any other method of loading. But, the cost of operating a Barber-Greene Bucket Loader is lowest of all. Here are a few of the long-life and time-saving features that keep expenses at rock bottom:

1. Strain and damage to boom frame are prevented because the thrust of loading is transmitted directly to the crawlers through push arms.
2. Clean pick-up, requiring no additional hand labor, is assured by the automatic follow-up scraper.
3. Wear of working parts is reduced with use of a double transmission that permits 12 crowding speeds.
4. An automatic overload release prevents breakage of operating units.
5. Points of greatest wear on the buckets are faced with an abrasion-resisting weld.

For complete details see your B-G representative or write the Barber-Greene Company, Aurora, Illinois.

## Barber-Greene



*Constant Flow Equipment*





# Specifications

## Require Higher Quality Aggregates

ONE OF THE QUESTIONS asked our readers concerned specification trends, since we have heard much of supposed new and tougher specifications, such as a trend toward higher percentages of minus 50-mesh and minus 100-mesh fines in concrete sand, which would materially influence postwar operations.

The majority of replies to our question as to whether any specification changes are contemplated that would affect operations indicated no revisions are contemplated to their knowledge or that minor changes would be adopted. A few producers of aggregates replied that specifications would be more rigid after the war without stating in what particulars, others indicated that closer tolerances would be specified, a few believe more fines in natural sand aggregate would be mandatory and there were some instances where the producers stated that quality standards would be stiff. We agree that quality standards will be raised or at least more rigidly enforced since, through necessity, construction aggregates have been produced in tremendous volumes on many wartime projects with sacrifice to quality.

### Crushed Stone Producers' Comments

A California producer of crushed stone discussed specifications as follows:

"There are conferences in progress now as to new specifications, but any changes that may be made will probably be minor, except in the matter of tolerance percentages and possibly quality. With the demand that has existed for the past three years, certain branches of the aggregates industry have been getting by with murder or worse, but with the resumption of highway construction of a permanent nature, it is a good bet that the specifications will have to be respected more than they have been. More screening capacity is indicated in most of the plants when such machinery becomes available, with the elimination of the small portable plants supplied by roadside deposits, which have been used on so many of the emergency war time jobs to put them through as fast as possible and avoid delays and car shortages on the already overburdened railroads."

A producer, operating several crushed stone and sand and gravel plants in New York State said:

"There has been a trend for the past several years to increase fines

**Producers seeking to find agreement with state and federal authorities for standardization to reduce number of specifications; also modifications which will make them more practicable and less costly**

in concrete sand. It happens that our deposits are such and our equipment as well that such changes do not bother us at all. As a matter of fact, it helps us to get rid of what was formerly an excess of fines. We have not, as yet, heard of any other important changes contemplated by the New York State Highway Department."

From New England, a trap rock producer remarked as follows:

"We do not propose to increase our normal capacity. We have noticed an increase in demand for smaller sizes and it may be necessary to install machinery for increasing fine stone capacity. We have no stone shape problem at this plant, and a very satisfactory dust collecting system is already installed."

From Iowa, a producer of crushed limestone and agricultural limestone reported:

"We do anticipate some definite specification changes but don't know at this time what they will be. They are in the rumor state now."

A producer of crushed granite in Georgia comments generally on specifications as follows:

"We do not expect any new markets or very little change in specifications, although all producers will have to be more particular as to quality, gradation, etc., after the war than they have during the emergency."

"There has for some years been a big demand for small sizes of aggregates in this state and for that reason don't think our producers will have to make many changes as to new equipment to make any quantity of small sizes."

### Sand and Gravel

A very large Illinois producer of sand and gravel comments as follows on the production of fine sand aggregate:

"It is true the Division of Highways of Illinois, the railroads and, in fact, the concrete world generally,

*(Continued on page 178)*



A trend interrupted by the war is the installation of impact reduction crushers such as this one, for example, to "cube" aggregate and/or remove soft particles by crushing

# *On the Battlefield*

## **GRUENDLER Portable JAW CRUSHERS**

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IN CHINA, INDIA, AFRICA AND THE PACIFIC ISLANDS**



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"Let GRUENDLER'S wartime efficiency insure your peace time prosperity"

# **GRUENDLER**

## **CRUSHER *and* PULVERIZER CO.**

**2915-17 North Market St., ST. LOUIS (6), MO.**

are tightening up on the specifications covering fine aggregate and the producers are now planning to adjust the processing of the material so that a larger percent of fines may be prepared to pass the 50-mesh and the 100-mesh sieves. The deposits of sand and gravel in Illinois outside of the Northern Joliet district contain quite a large percent of fine material. No serious difficulty will be experienced in most instances to prepare a grade of torpedo sand that contains 10 or 15 percent passing the 50-mesh but there is little, if any, fines in any deposit that will pass the 100-mesh sieve. In the event our industry is required to produce a finer grade of concrete sand, it is safe to assume that the manufacturers of equipment will soon provide the producers with roller crushers and other equipment necessary to meet these new demands. The public officials have assured the producers that no radical changes in the specifications will be made until conditions become more or less normal and the equipment necessary to process the new grade of fine aggregate is available. Consideration is now being given to changing the proposed specification passing the 100-mesh sieve from 2-10 percent to 0-10 percent which, if the change is made, will remove the compulsory factor of requiring any of the material to pass the 100-mesh. With reference to removal of deleterious materials, our plants are now equipped with log-washers and other equipment which removes very effectively foreign material of this character when it shows up in the deposits."

From Oklahoma we received the following comments on the same subject:

"The tendency toward increasing the fines passing the 100-mesh screen is a real problem for all river sand producers and particularly in territory where the density of population isn't sufficient to warrant a large investment and there are many small producers."

## Standardization of Aggregate Sizes in California

Standardization of aggregate sizes and their gradation is coming under scrutiny in California. A producer of sand, gravel and rock in northern California had this to say about specifications:

"On the question of specification changes, this matter is now being studied by our industry in this state with a view to reducing the number of sizes now produced, which during recent years has grown to an unreasonably large amount, serving no practical purpose in the production of satisfactory concrete. This is due largely to the fact that architects and engineers in charge of government

work have frequently drawn special specifications for individual projects, differing in each case perhaps only in some minor respect but requiring special plant operation and work, at additional production cost."

## Asphalt Mixes

From southern California another producer of the same types of aggregates and ready-mixed concrete wrote:

"The asphaltic mixes demanded show that there is a tendency toward a greater percent of fines in the mixes. This requirement is making it necessary to do more fine crushing. As the crushing is carried on to finer sizes it becomes necessary to install much more fine screening area or additional screens."

"The specifications for gravel production should be standardized to the point where different agencies will all use similar size ranges. Such a standardization will greatly improve the production problems now beset with a number of specifications differing only slightly. This slight difference while of no appreciable actual value makes it necessary for a producer to constantly change screens, provide additional bins or change bins first to one size then to the next size. Storage space is used up in having two or three stock piles where one would be sufficient."

A Mississippi producer of sand and gravel discussed specifications in their relation to construction as follows:

"Our company is playing a game of watchful waiting insofar as specifications are concerned. Nothing definite has been set up in our trade area and we do not expect a definite set-up in specifications until many of the engineers who are now in the service return to civilian jobs. Engineers who have gone into the Army or Navy have had numerous opportunities to more or less experiment with concrete materials, asphaltic aggregates, etc. Many of these occasions were brought on by necessity of using the best material that could be had the quickest. They have learned a lot."

"We believe there will be two definite trends in post-war road building. The higher type cement and asphalt pavements will require a more rigid specification than before. But on the other hand there are countless miles of dirt roads, low-type gravel roads over which traffic is light but these roads lead to a citizen's home or farm and he is demanding that some of this money be spent to get him out to the main highway on a surfaced road. He is very likely to get a surfaced road, a farm-to-market road, and on that type of road the engineer must get the most miles for the dollar and he

must use cheap materials and cheap materials can't have rigid specifications. The engineers now doing the planning are thinking of road-mix with bank run gravel and sand, soil cement stabilization—a road to handle light traffic that will require a minimum of maintenance."

"Specifications, in our opinion, will never be too hard as long as we can produce material that will get the proper strength test, for, after all, strength in concrete is what is required and so long as a material, when properly mixed with cement, will get the required strength and will do the job, why worry over whether there is 50-mesh or 100-mesh or what not."

While the majority of producers who believed there will be changes to specifications in the postwar years said they thought they would generally be tightened, a large producer of sand and gravel in Texas had this to say:

"As to specifications, I doubt very much if they are tightened up considerably beyond present regulations. I say this because they are already pretty tight and the extremely high demand which will follow the end of the war in most sections will be the cause probably of somewhat lower specifications and perhaps the waiving of some of the finer points. From all I can see, the demand is going to be terrific and the purchaser therefore not too choosy and the engineer anxious to get on with the job rather than fussing about some fine point in the specifications."

"It is my observation that the boys who are having trouble with the fines in sand are those who do not have the fines in the sand and have to make them. Usually here in Texas we do not have so much trouble because our engineers and contractors have improvised by adding what we call blow sand which is very fine and/or raw cement; that is, unburned cement. It strikes me this is the most practical way to handle the situation of very fine sand."

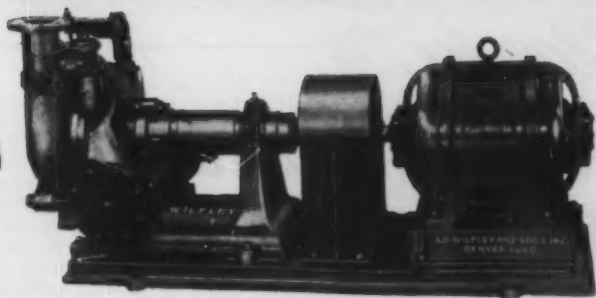
## Lime Specifications

Various general replies were received from producers of other types of rock products than aggregates. A typical pointed reply to our inquiry, from a producer of lime in Ohio, reads:

"Yes, we do anticipate a change in specifications for finishing lime and mason's lime after the war. Our company has built an autoclave plant for the production of autoclaved lime for use in building construction which will meet the proposed federal and the A.S.T.M. standard specifications. In fact our new products are going to have an expansion factor of less than one-half of one percent as determined in the autoclave test."

(Continued on page 205)





# *Production ...* **THAT NEVER FALTERS!**

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## Developing New Products for More Exacting Demands

**P**RODUCERS of all types of rock products were asked to comment on new markets to be opened in their sales territories and new products or by-products which have been or will be developed. It was expected that replies to this question would be few, particularly from producers of aggregates and for obvious reasons.

Aggregates do not lend themselves to many really new uses but they do to changing markets as suggested in some of the letters we received and to a few markets for fine sand products which probably have been explored by relatively few producers. The asphalt sand produced by the Metropolitan Sand and Gravel Corp., New York, N. Y., from reclaimed fines accumulated over the years (see article in this issue) is an outstanding example. Many sand and gravel producers are contemplating entry into the concrete products business as sidelines.

### Crushed Stone

A crushed stone producer from South Dakota wrote:

"It may be that new markets will materialize as a result of Missouri River improvement. We operate a culvert factory and desire to add additional lines when this is possible."

From California a crushed stone producer refers to railroad ballast as a new market, as follows:

"The only new market that has appeared this year is for railroad ballast. Our output of this rather low priced material has been restricted to only some of the local needs, as other plants quote much lower prices f.o.b. than we do, and the railroads have been willing to haul this material more than 100 miles into this district on account of these low plant prices."

A Texas producer of crushed stone anticipates a postwar market for waste "silt" in agriculture. He states:

"About new markets opening up for our products. There has been some of this, most of it war created and likely to end with hostilities. However, the only waste or by-product we now have and are without a market for is the silt that deposits out of the waste water that comes from our washing plant. This silt is being collected in settling basins and one day when we get enough of it on hand, say 50,000 tons or so, we are going to try to sell it to the farmers around our plant. It should

be just the thing for their land consisting as it does of a mixture of virgin black top soil, limestone and clay all in finely subdivided form."

An Ohio producer of crushed limestone and lime anticipates that some of the new uses for lime developed during the war will be retained after the war. He wrote:

"It is difficult to imagine really new markets in the rock products industries. The war has produced many new uses, particularly for lime and part of these should remain with us. The post war construction field offers the greatest single opportunity for expanded business and this of course is not a new use, merely a new phase in the business."

A producer of crushed granite from the South commented:

"We do not anticipate any new markets to be opened in our territory in post war times but that we will revert to road and bridge construction principally."

Another producer of crushed granite from the South wrote:

"We contemplate a big demand for concrete products, including block,

brick, septic tanks, drain tile, and similar products used in urban and rural dwellings.

"Washed sand from stone fines should find broader markets due to increased costs of local creek sands and more rigid specifications. We contemplate entering this market and will require considerable washing and conveying equipment."

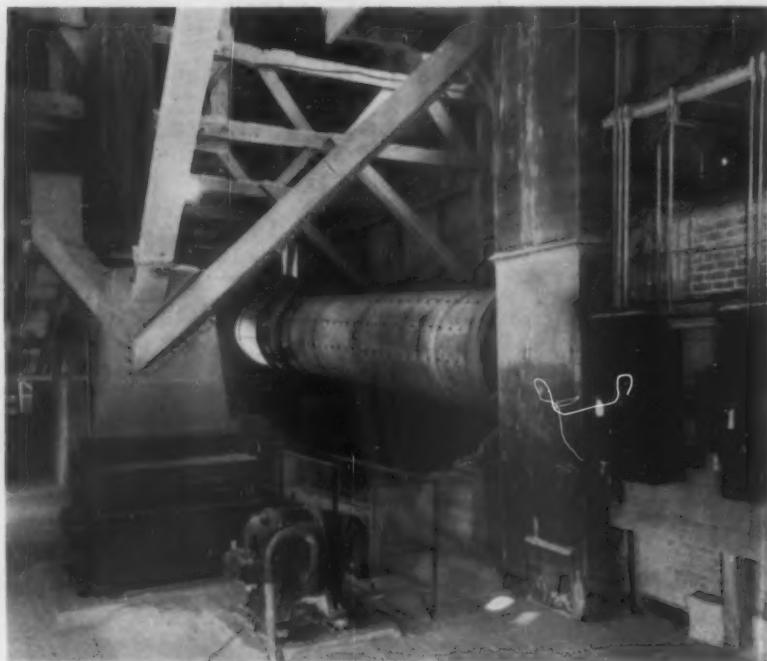
### Sand and Gravel

In the Southwest several new markets for sand have been developed. A large producer wrote:

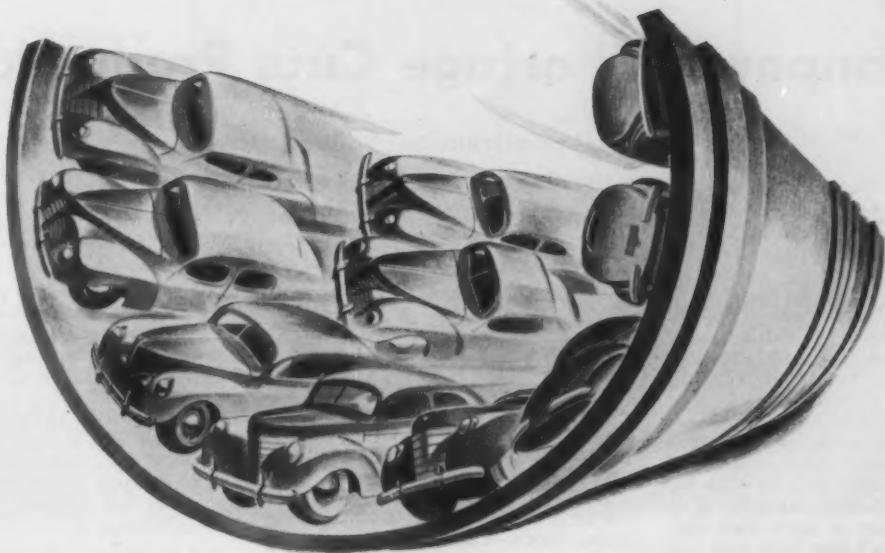
"Of course, there are continuous new markets developing, most of them very small. For instance, a man here called me the other day and wanted to purchase one bushel of crushed stone with certain chemical characteristics, because he is in the business of raising orchids. Strange to say, also, we have a fairly good market in spots furnishing sand to fertilizer factories. Sounds strange, doesn't it? We have another market for sand which is used by manufacturers of roofing; another considerable market is filter materials, some of which we ship to central Mexico.

"There will be after the war many new markets developed for anything we have to sell. At the present time we have no waste material except mud and no by-products particularly. In other words, we sell everything we can manage to get in shape

(Continued on page 203)



Interior of Thomasville Stone and Lime Co. plant with modern rotary dryer. Hammermill is located to the left



## the most frequently traveled road

The most frequently traveled road is a very short one . . . only a few inches long. It is the cylinder in your gasoline or Diesel engine. And the piston and rings travel over this short road more than 3000 times a minute . . . 180,000 times an hour.

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for lubricating oil . . . feeding it back to the surface as needed. It reduces both corrosion and wear on cylinders and rings, and thus assures a substantial saving in engine operating costs.

Of course, you will want PORUS-KROME on the cylinders of your engines. But right now the entire capacity of the three Van der Horst plants is required to process cylinders of engines for war machines . . . tanks, submarines, landing craft, etc.

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new engines and also in replacement liners for existing engines. Then you, too, can have this greater engine reliability. *Plan now to use PORUS-KROME in your own engines.*



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## Manpower Shortage Cuts Production

Drop in construction volume eases labor shortage in most areas. Industry plans for reemployment of veterans

LACK of construction projects in 1944 has resulted in comparatively low volume of business for the majority of rock products producers, certainly by comparison with the 1942 war construction peak year. But, it is doubtful if many producers, including those engaged in filling non-construction demand, could have handled much more volume with the limited labor available and the generally low caliber of labor they had. Many producers could have sold and delivered more materials than they did, in 1944, if they had sufficient labor, and in some instances lack of labor and high labor costs per unit of production have discouraged new ventures.

Producers have been questioned as to the extent that the labor shortage had handicapped 1944 tonnage and will in 1945, also, to determine their attitude toward re-hiring returning war veterans including the handicapped. It appears, from letters received, that the peak of the labor crisis was passed in 1944 although many producers also believe that 1945 will be a year of critical labor shortage. Universally, the industry is prepared, in fact anxious, to rehire returning veterans including all the handicapped physically able to hold jobs.

A producer of crushed stone from northern California discusses the labor situation as follows:

### Crushed Stone Industry

"We are in the center of a labor scarcity area. There is still a shortage of 27,000 men in the local industries and this has been practically the same for all this year. With most of the employers paying higher wage scales than our 1942 frozen labor contract, we have been short handed for a year or more to the extent of 10 to 15 percent of our normal operating force. This does not tend to make it any easier to supply a demand which has been for three years somewhat more than we could produce. We are under an A.F.L. master contract negotiated collectively for the members of the Northern California Rock, Sand and Gravel Producers Association, which has been in force for seven years with wage rates frozen for the past three years. Owing to this fact and also that there are jurisdictional and factional disputes between the seven unions involved, amounting in some cases to internecine warfare, we have never completed our 1944-45 contract, and are still operating under last year's conditions and provisions. This does not stabilize the labor situation to the point where it is easy to operate under.

"Our 15 employes who have entered the armed services will be welcomed back with open arms. They will bring us back up to our labor ceiling for

the first time in two years. I do not figure that our situation is typical of this region in general. A rock, sand and/or gravel plant is just what Senator Sherman years ago said about the tariff—"It is a local issue." When the cost of moving the product approaches the sale price at the plant, the business goes to the nearest source of supply whose shipping facilities are adequate to handle the requirements of the job."

A producer of flux stone in western Pennsylvania wrote:

"This is in reply to your letter of December 1st regarding the business outlook and other questions facing us in the near future and for the post war era. We here in the Hillsville district are experiencing a very acute manpower shortage and we look for no particular relief in this respect until many more of our men who are at present in the service are returned to civilian life."

A New York State producer presented the following analysis:

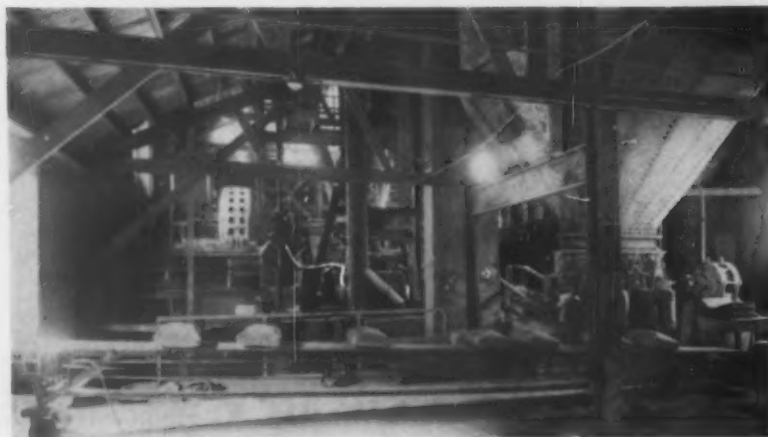
"We have had a tough labor situation for the past two or three years. This has eased somewhat in the past few months and our expectation is that this trend may continue in 1945. We do not anticipate any lowering of rates of pay; in fact, it is our idea that they will raise if anything. In general, it seems to us that the long-term prospect in the aggregates industry hereabouts is very good; the short-term prospect very uncertain."

From New England we received the following report from a crushed stone producer:

"Labor has been scarce all this year and we have not been able to hire the necessary help to take care of our business. The quality of the men available is also far below par.

"We have had some experience with war veterans this year and it has not been satisfactory. The men that have come back from the war so far were for the most part let out because they were physically or mentally incapable of waging war. For the same reasons they were incapable of making good employees. We will continue to hire and re-hire war veterans, and believe that a better grade of men will be forthcoming as

(Continued on page 238)



Modern method of handling packaged agricultural limestone to box cars at Anville Stone Co.

★  
Machines like this for applying Rip-Cord closures to cotton valve cement bags enable one operator to sew and bundle over 1000 bags an hour. The conveyor, synchronized with the sewing speed, carries bags through the machine and automatically stacks and counts them.

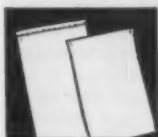


## Bemis Rip-Cord Closure makes cotton cement bags go further

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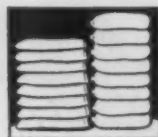
More trips per bag is only one of the economies of using the Rip-Cord Closure. The original cost of bags is less than when made for wire tie closing because bags can be made smaller and without hems. Efficiency in filling is stepped up. There are added savings in handling...in storage and shipping space. Mail the coupon today for complete details on the efficient, economical Bemis Rip-Cord Closure.



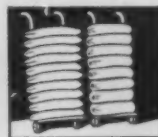
**Saves Money!** With Rip-Cord Closure bags can be made smaller and without hems and their life is increased, thus reducing costs.



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AND LITERATURE**



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## SPECIFIC GRAVITY

### Key to Scientific Concrete

First of a series of articles which will outline precision control methods of concrete manufacture

By R. E. ROBB

**P**RECISION CONTROL of concrete manufacture is now an accomplished fact. Concrete can be, and is being made with an exactitude comparable with the manufacture of steel—but only in those plants which are equipped, both mentally and physically, to take advantage of the enormous opportunities offered. Better concrete from every angle—uniformity, strength, impermeability, volume change, cracking, resistance to wear, etc., can be made for less money, and either sold at a premium, or sold, when the competition is stiff.

The emphasis in war construction has been on speed, and more speed, with little thought to cost. In the post war period which is just about upon us, however, cost will again become the paramount consideration. The wise concrete manufacturer, whether ready-mix, concrete products or general contractor will be the one who equips himself and his plant to supply concrete of required quality at minimum cost. He will be the one who will be able to meet competition and stay in the game. To do this he must know what he is doing—he must have precise control if he is to supply a standard product.

There are a number of prerequisites to such precision manufacture. There must be thorough knowledge of the principles which govern the design, and control the manufacturing operations. There must be specialized technical equipment and instruments. Finally, there must be constant diligence to see that principles and equipment operate properly. The care and effort expended, however, will bring rich rewards.

While accurate design and control are dependent upon interrelated and somewhat complex laws, the necessary operations in the field are rela-

Technician demonstrates use of auxiliary scale indicator from which moisture determinations of aggregates are taken



tively simple. In this, and the articles to follow it will be shown that any plant equipped with reasonably adequate apparatus and ordinary intelligence can produce good concrete under close control, and the plant which has thoroughly modern equipment and trained technical operators can control its product with extreme precision.

The concrete manufacturer is confronted with a paradoxical condition; he must proportion his concrete mix by weight to have any semblance of control, yet he must sell it by volume. His mix formula must be in pounds, his delivery in cubic yards. This requires that he must know the weight-volume relationship on an absolute basis for each ingredient at all times in order that the volume of his mix may be exact. Specific gravity gives this relationship. Hence, of all the factors involved, it is of paramount importance. It is the key to scientific design and precise control of concrete mixes.

#### Close Control Cuts Losses

Some indication of the importance of the ready mixed concrete operator having exact specific gravities at all times is found in what an error of only one point will do to profits. If, in a plant selling 100,000 cu. yd. of concrete per year, a specific gravity of 2.65 were to be used for the aggregates in the mix when the correct specific gravity was 2.64, approximately 300 cu. yd. of concrete would be given away absolutely free in

excess yield each year. At \$8.00 per cubic yard this one point error would cause a loss in revenue of \$2400 per year.

In the case of the concrete products manufacturer, the loss may not be so apparent but may be even more serious, as it concerns quality. Strength, density, volume change and other factors which determine quality are dependent upon correct design, which in turn depends upon accurate determination of aggregate specific gravity.

When concrete is discharged from the mixer the particles of aggregate in the batch are saturated; i.e., the pores are filled with water. Since this is the condition for which the concrete mix must be designed, the specific gravity of the saturated aggregate must be secured. This requires that the sample used in making the specific gravity determination must be completely saturated.

Another requirement for the sample is that there must be no moisture adhering to the surface of the particles. If there is, and a known weight, in air, is submerged in water to determine its specific gravity, the sample immediately shrinks, losing the weight of water which was adhering to the particles. The determination will necessarily be incorrect.

The accurate preparation of a saturated, surface dry sample of aggregate, especially of sand, requires certain safeguards. If a sample of coarse aggregate, say 2-in. gravel, is soaked thoroughly and then removed from the water and wiped dry with



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Smith-Mobile's big, roomy feed chute and patented drum construction speeds up truck-mixer charging. The aggregates drop vertically into the chute and continue at high velocity through the charging cone (an exclusive and patented Smith feature) toward the opposite end of the drum. *Gravity does the job!* The action of the mixing blades merely accelerates the flow of the materials. There are no shafts or rods to clog up the feed chute. Smith-Mobile is by far the fastest charging truck mixer on the market.



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a turkish towel, a very close approximation to the required condition will be secured. This is because the surface area is relatively very small compared with the total volume of the particles. In fine aggregate, however, where the surface area is relatively very high, the evaporation of the water from the particles themselves is the limiting factor. The surface of the particles can be wiped dry, but it is impossible, under ordinary atmospheric conditions, to keep the absorbed water from drying out. Some particles in the sample will inevitably be completely dehydrated before all of the surface water is evaporated. This is evident by the very noticeable change in color of the sand while being dried. If the wiping of the sand could be done in an atmosphere which was saturated, and hence could not take any moisture from the particles, the desired result would be secured, the sample would be thoroughly saturated but without any moisture adhering to the surface of the particles, or filling the spaces between particles—it would be saturated, surface dry. To do this requires a piece of special, but very simple equipment.

## "Wiping" Excess Water from Sand Sample

This apparatus consists of a motor driven square or hexagonal box lined with porous material. For temporary use a lining of celotex, masonite or similar porous building material is satisfactory. For continued use the box should be lined with an absorbent material, such as turkish toweling, which can be removed, washed, dried and replaced.

A sample of saturated sand (practically all sand in an exposed pile is saturated, as evidenced by its cohesiveness when poured and by its relatively dark appearance) is poured into the box through a hole in one side, the hole is closed and the motor is started, rotating the box. As the box turns the sand rolls over and over across the absorbent surface, giving a wiping action to the grains. Since the box is closed air tight, no moisture can escape and the atmosphere inside the box quickly becomes saturated. Thus the moisture is completely wiped from the surface of the particles without the possibility of any of the absorbed water being dried out.

A simple but extremely accurate test shows when all of the surface water has been removed. The presence of surface water in a sand, due to the phenomenon of surface tension, causes the particles of sand to adhere to each other. This is shown in the difference between the way damp and bone dry sand pour. The latter runs freely like sugar, the former sticks and runs in jerks, the degree of jerkiness being roughly



Batching scale and recording graph which regulates all operations for a permanent record. Lines on graph record when each ingredient is weighed out

proportionate to the amount of surface water around and between the grains. As this surface water is removed the sand runs more and more freely until, when all has been removed, but not until then, it pours as freely as dry sand.

This surface dry point can easily be determined by taking a sample of the same sand and heating until it is bone dry. Then take a portion of the bone dry sand on a trowel in one hand, and a similar sample of the sand being dried in the box on another trowel in the other hand. Tilt both trowels equally so the sand on each pours at the same time. When the test sample pours as evenly as the heat dried sample it is surface dry. Yet it is completely saturated. It looks exactly like the saturated sand in the pile, yet handles like dry sand. It should be removed from the box by pouring directly into an air tight container, a two-quart glass jar is satisfactory, and kept for specific gravity determinations. Sand in this condition is completely inert to water. When placed in water in a container it neither adds water to nor subtracts water from the water already in the container.\* It is in the same condition as the aggregate is when discharged from the mixer; i.e.,

\*That sand actually does absorb water can easily be demonstrated, and the percentage of absorption determined by the following simple experiment: (1) Weigh out a sample of saturated, surface dry sand, say 1000 grams. It will run freely and will show no tendency to stick on a trowel. (2) Place this sand in a flat pan over a hot plate and stir with a trowel. It will be found that the sand gets sticky—adhering to the trowel, and looks wet—the glisten of surface water is apparent. (3) Dry to constant weight, cool and weigh. It will be found that the weight has decreased appreciably. (4) Divide loss in weight by original weight of the saturated, surface dry sand to get the percentage absorption. This will be found to be from 1/4% up, depending on the type of sand.

it is completely saturated and the specific gravity determined from such a sample can be used with complete confidence in design and control operations. Coarse aggregate is treated in the same way, except that its surface dry point is readily determined by appearance.

## Determining Specific Gravity

Perhaps the most satisfactory instrument for making specific gravity determinations is the sample pycnometer, made from an ordinary screw topped mason jar of two-quart capacity. It also is a very effective and practical moisture meter. The top should be cut out of the screw cap and a metal cone about 2 in. high, with a 1/4-in. hole in the apex, soldered in. This conical top should be screwed on tightly, with rubber washer in place, and a vertical mark made on both the cap and the bottle. Each time the cap is placed on the bottle it should be tightened so these marks coincide. This is to insure exactly the same volume in the pycnometer for each operation. Under these conditions this instrument will hold the same volume at all times, within limits amply close for specific gravity or moisture determinations.

A simple laboratory type scale which can be read to half or tenth grams, with capacity of 5000 grams, and an ordinary rubber ear syringe, complete the equipment necessary for the accurate determination of the specific gravity of practically any concrete aggregate.

Since specific gravity is the weight of a given absolute volume of the material tested compared with, or divided by, the weight of the same volume of water, the problem resolves itself into determining how much water is displaced by a given weight of aggregate. First, the weight of

(Continued on page 186)



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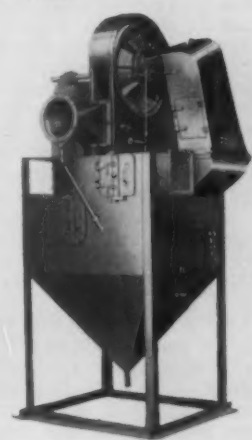


**TYPE D ROTO-CLONE**

A revolutionary advancement in process dust control—combines fan and dust collector in a single compact unit. More efficient than standard exhausters and cyclone separator which it replaces. Simplifies dust control, eliminates extensive piping and reduces cost of installation. Wide variety of types and sizes. Write for Bulletin No. 272.

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Combines the scrubbing effect of water sprays with principle of dynamic precipitation as employed in the Type D. Provides complete collection of finely divided materials, eliminating any possibility of a secondary dust problem. Collected material disposed of as sludge. Available in capacities up to 30,000 c.f.m. Write for Bulletin No. 274A.

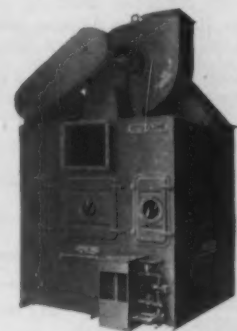


**TYPE F ROTO-CLONE**

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# Calcination

## Refractory Linings for Rotary Cement Kilns

### Part 1: Operating troubles and suggested solutions

**M**ANY VARIABLES in rotary cement kiln operation preclude the possibility of predicting the service secured from the refractory linings based on analogy only. For example, at some few cement manufacturing plants, the usual high heat duty fire-clay brick, namely first quality brick, are used economically in the burning zones, rendering a service of six months of continuous operation and even longer. In other plants, even with the use of the more costly refractories, such as magnesite brick and those of higher alumina content than the usual 70 percent alumina brick, it is not abnormal to secure a life of three months or less.

A brief enumeration of some of the variables which may affect the life of refractory linings in rotary cement kilns should be interesting.

#### Variables Affecting Lining Life

The composition of the clinker has a definite influence upon its behavior when burned. For example, a difference of only a small percentage in the lime content may result in drastically different burning characteristics. At some plants the feed is relatively very high in alkalis, and

By W. F. ROCHOW\*

clinker made from such mixes, even though burned at a lower temperature than is customary for burning more refractory mixes, can have a severe chemical action upon the lining, especially in the burning zone.

The temperature of sintering or clinkering has much to do with the service given by the lining, and this of course is dependent upon the heat required to properly clinker a particular mix.

A slight increase in average particle size may make a given mix very much more difficult to clinker properly, due to the fact that the contact between particles is not sufficiently intimate and accordingly a higher temperature must be maintained.

Lack of uniformity in the chemical composition of the feed may have considerable bearing upon the life of the lining. In some operations, it is not unusual to find it necessary to contend with sandy clay. The operator may not be aware of this immediately, and a loss of the coating may result before a correction can be made.

Irregularity of the feed which is sometimes unavoidable is a con-

tributor to the consumption of the lining at a greater rate than otherwise would be normal. Obviously when the lining is exposed to direct heat and to higher temperature, it is subjected to more severe treatment.

The tendency of ring formation is undesirable from the point of view of lining life. It is sometimes considered necessary to remove rings by the introduction of water to spall-off the coating. The removal by mechanical means, as by shooting, also can be detrimental to the lining. Any change in the mix for the purpose of reducing the coating introduces another operating variable.

Frequently, it is desirable and economical to increase the tonnage produced, despite an appreciable shortening of the life of the burning zone lining.

When a kiln is stopped, even for a short time only, if the burner is not turned off during the shutdown, brief though it may be, the treatment imposed upon the lining is intensified. In connection with the matter of the regularity of the operation, it is a fact that when a kiln is shut down completely and cooled for any length of time, the coating in its entirety, or a major portion of it generally is lost. With the five-day per week operation, this has become an im-

\*From a paper presented by Mr. Rochow of Harbison-Walker Refractories Co., before the Portland Cement Association.

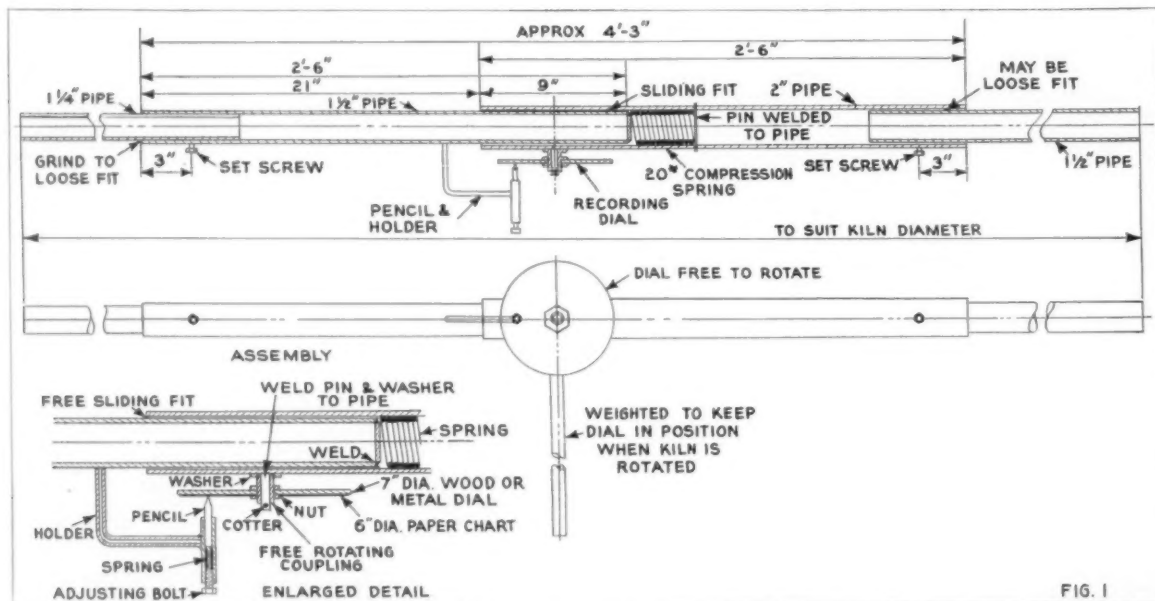


Fig. 1: Device for the measurement of rotary kiln sag

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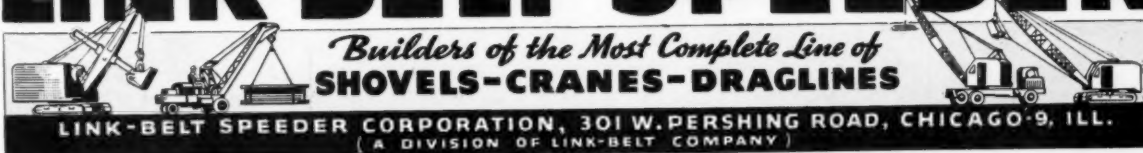


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portant factor. The slaking of free lime on long standing also may result in the loss of the coating.

The multiplicity of mixes such as now have become very common for the numerous kinds of cement that need to be produced is a definite factor in shortening the lining life.

The length of the burning zones, burner adjustment, direction of burner and kind of fuel used exert a positive influence on lining life.

Unsatisfactory conditions of the atmosphere maintained in the kiln can have a detrimental action upon the refractories. It has been determined that the fusion point of a refractory may be considerably lower under reducing conditions than in neutral or slightly oxidizing atmospheres, and that the mechanical strength and resistance to abrasion also are impaired. Under reducing conditions many slags react with the refractory more readily and with greater intensity than in neutral or slightly oxidizing atmospheres.

The condition of the shell and its support, obviously are very important. A kiln shell which has been in service for a very long time may be warped in places, which rather jeopardizes the lining to begin with, because of the extreme difficulty of installing it to best advantage. With even the best shells there is the tendency to distortion as it rotates, and this has been measured for a number of kilns. The horizontal diameter is always slightly or appreciably greater than the vertical. The difference as measured with the device as shown in Fig. 1, has been found to be from 3/16 in. to as much as 3/4 in. The effect of torsional stresses upon a lining is illustrated in Fig. 2.

For securing the best results from a lining, careful supervision of the installation is fully as important as good control of kiln operation. A little farther along this is referred to in fuller detail.

With variables such as those dis-

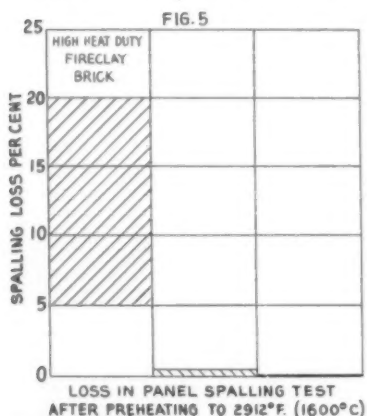


Fig. 5: Resistance to spalling—fireclay brick and super-duty fireclay brick

cussed, many of which are unavoidable, the selections of the refractories for linings of rotary cement kilns are made to best advantage from the entire range of the various types and classes now available; namely, high heat duty fireclay brick, super-duty fireclay brick, high-alumina brick, chemically bonded magnesite brick, magnesium silicate brick, and hard burned magnesite brick. Having such a wide range from which to make the choice, the more carefully should it be done, for assuring maximum life and lowest overall cost. The following table will indicate the

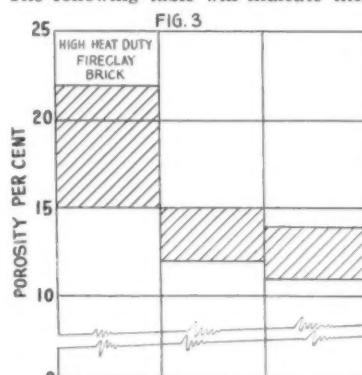


Fig. 3: Porosity—fireclay brick and super-duty fireclay brick

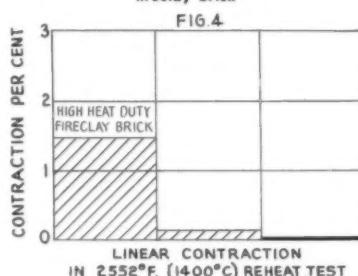


Fig. 4: Linear contraction—fireclay brick and super-duty fireclay brick

approximate range in material costs at the current prices.

## FOR 10-FOOT DIAMETER KILN

	Works Price Per Lineal Foot
High Heat Duty Fireclay Brick	\$ 18.00
Super-Duty Fireclay Brick	23.00
High-Alumina Brick (70% Al <sub>2</sub> O <sub>3</sub> )	47.50
Magnesium Silicate Brick	100.50
Chemically Bonded Magnesite Brick	120.50

## Selection of Refractories for the Various Zones

Starting at the feed end of a rotary cement kiln, the treatment imposed upon the lining in the feed end section is relatively moderate in that the temperature is not high, temperature changes are not severe, and abrasion is of no consequence because of the fineness of the mix. A high heat duty fireclay brick of good workmanship and satisfactory resistance to spalling conditions, gen-

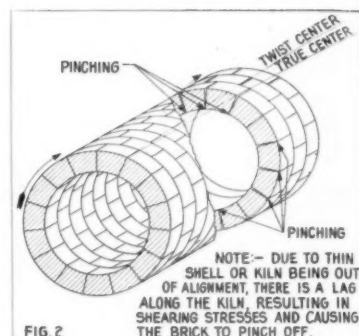


Fig. 2: Effect of torsional stresses upon a lining

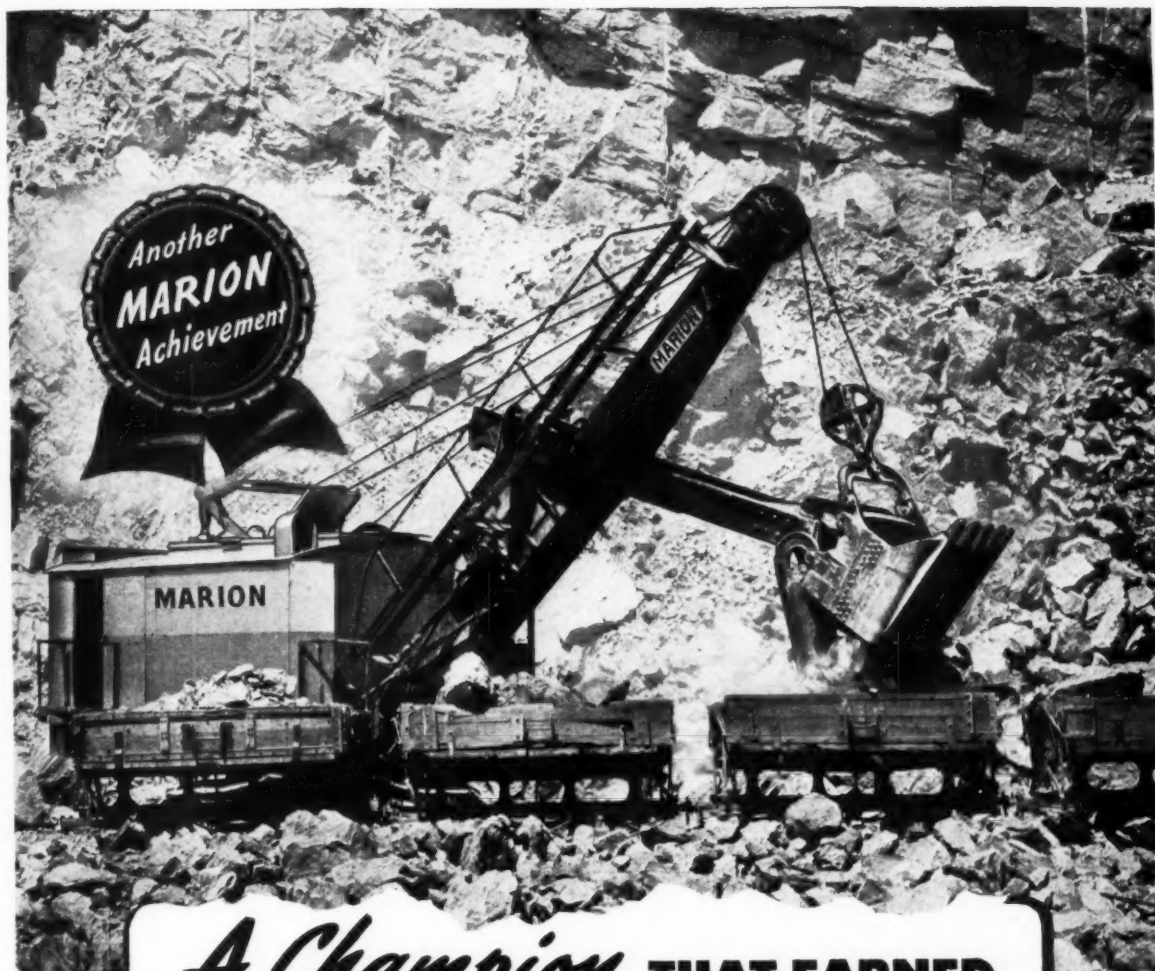
erally is adequate. Good strength, in any event, is especially desirable, and is the more important in the case of shells that have been in service for a long time.

In kilns which are provided with chains, it is extremely desirable to use the refractory which is most resistant to abrasion. There is available for this purpose, a special type of very hard dense fireclay brick, which incidentally is similar in composition and strength to acid-proof brick. As an indication of resistance to abrasion some comparative results from rattler tests are interesting. The figures are relative only, because the rattler test in itself is an arbitrary means for measuring the resistance of various kinds of ceramic bodies to abrasion. In any event the comparative figures serve to illustrate differences. A strong dense high heat duty fireclay brick will show a loss of from 30 percent to 50 percent, while the refractory of special density and strength shows a loss of less than 20 percent.

Incidentally, this latter type of refractory is used to very good advantage in rotary coolers and parts of coolers of other designs. In chain sections of rotary kilns and in coolers, the service rendered by the special dense refractory, having a texture corresponding to incipient vitrification, often is a matter of three or four years as compared with a life of even less than a year, from a normal dense strong fireclay brick. This special class of refractory is suitable for use at temperatures of about 2300 deg. F. to 2400 deg. F. Depending upon the arbitrary naming of the zones in the kiln, this refractory is used well into the section generally referred to as intermediate.

In the zone between that commonly called the feed end and the high temperature or clinkering zone, the treatment to which the refractory lining is subjected involves higher temperatures, more drastic temperature changes, such as induce spalling and, in many cases, some chemical reaction of the mix with the brick, in that portion of the lin-





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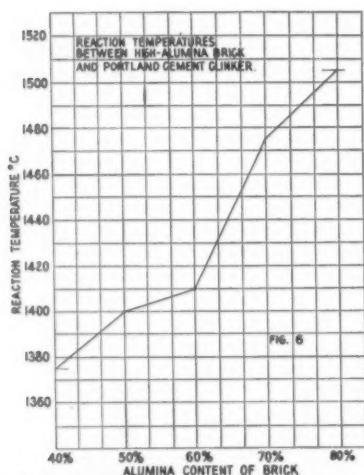


Fig. 6: Reaction temperatures between high-alumina brick and portland cement clinker

ing which is nearest to the high temperature zone.

High heat duty fireclay brick generally are adequate for relatively long service in the major portion of the intermediate zone. Good mechanical strength is very desirable because of kiln torsion and deflection, as well as other factors which impose some mechanical abuse upon the lining. Super-duty fireclay brick have become extensively used in this zone. This is a class of refractory which has been developed comparatively recently; that is to say some 10 or 12 years ago. The preceding Figs. 3, 4 and 5 graphically illustrate the essential differences between the high-heat duty and super-duty fireclay brick.

Depending upon the severity of the conditions prevailing in the high temperature or burning zone, various high-alumina brands are used with excellent economy in the hottest portion of the so-called intermediate zone. The selection of the refractory from the high-alumina classes is based upon actual experience in a given kiln and is governed by the length of burning zone which is considered most economical. For example, with the highly refractory basic linings, in many cases it is most economical to use the 70 percent alumina brick adjoining the magnesite or magnesium-silicate lining rather than to drop off suddenly to a less refractory material.

## High Temperature Zone

The various high-alumina classes of refractories are used with good economy in the burning zone, and the particular type found best is dependent upon the cost of the refractory and the service secured for a given set of conditions, such as are described in the discussion of the numerous variables.

In Fig. 6 are shown fusion points

of mixtures of portland cement clinker and alumina-silica brick of various compositions. In this research, the portland cement clinker was finely pulverized, as were also the brick, and a mixture consisting of 75 percent brick and 25 percent of the clinker was prepared in the form of a cone. With progressively higher alumina, the mixtures become less fusible, as indicated clearly by this curve.

The porosity of the high-alumina brands is generally within the range of about 22 percent to 30 percent, and the mixture of 75 percent brick and 25 percent pulverized clinker was arbitrarily taken for this set of tests, in that it generally represents within a reasonable limit the approximate mixture that would result from the penetration of portland cement

clinker into the brick. The specific gravities are not widely different for the refractory and the clinker.

Fig. 7 is the binary diagram for alumina-silica, and may be of interest in illustrating the relative refractoriness of brick of the various alumina contents such as are made commercially in a number of different brands.

The refractoriness as determined by pyrometric cone equivalents may be better illustrated by means of Fig. 8. This shows the P.C.E. determinations for the several classes of high-alumina brick.

Among all the high-alumina refractories, the 70 percent alumina class is used to far greater extent than the others for burning zone linings. For extremely severe condi-

(Continued on page 232)

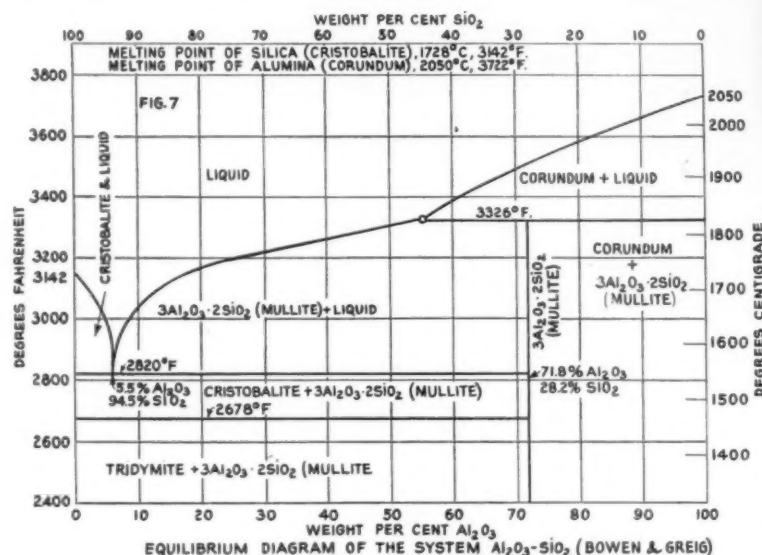


Fig. 7: Equilibrium diagram of the  $Al_2O_3-SiO_2$  system (Bowen & Greig)

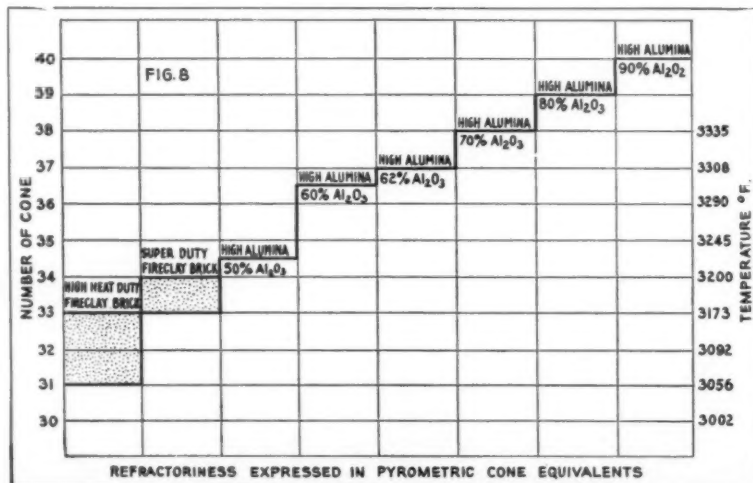


Fig. 8: Refractoriness expressed in pyrometric cone equivalents

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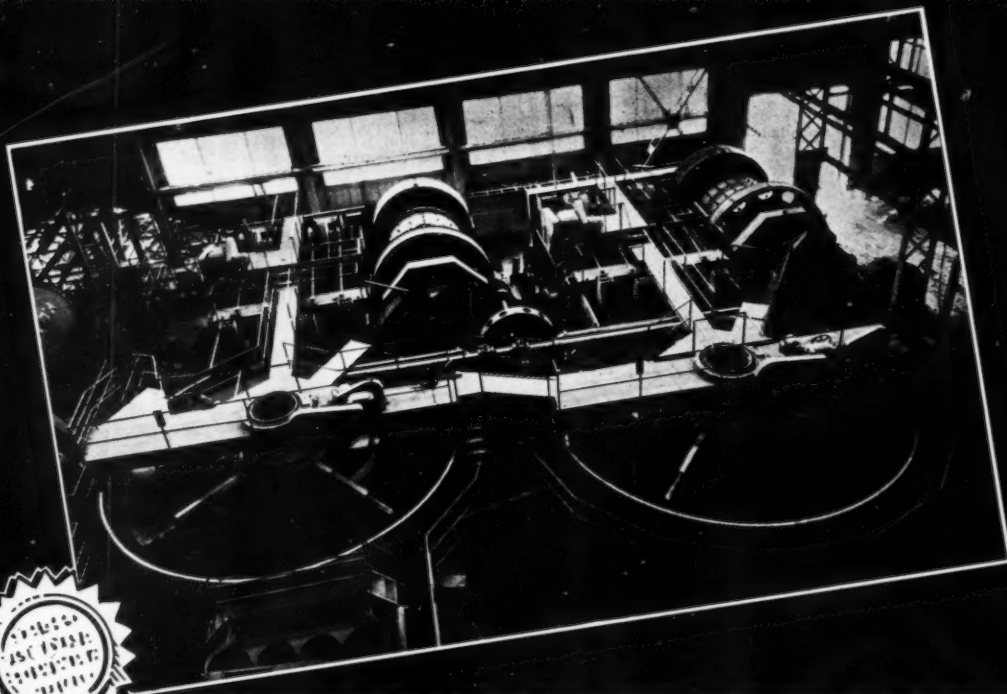
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2100

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2300



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# Chemists' Corner

## Designing Portland Cement Clinker

Charts have been found useful tools in making rapid calculations in blending raw materials and designing cement clinker

**I**n designing cement clinker or determination of corrections required in blending raw materials, network charts have been found very useful for making rapid calculations. The accompanying charts have been prepared for this purpose.

The majority of cement chemists would rather be concerned with the ultimate clinker minerals when designing a product than deal with abstract ratios of a portion of the compounds developed or with less meaningful ratios of the raw mix constituents. This is particularly true when the raw materials are of a variable nature or the raw mixture consists of several individual materials. Final blending control in such cases is often based upon the analysis of a laboratory clinkered raw mix sample and calculation of the clinker compounds implied.

Plants unable to control raw mix

Bogue, R. H.—Industrial Engineering Chemistry, Anal. Ed. 1,192 (1929). Dahl, L. A.—Rock Products, November 9, 1929. Janer, Benj.—Industrial Engineering Chemistry, Anal. Ed., 14,550 (1942).

By C. J. KNICKERBOCKER

blending by means of the customary apparent  $\text{CaCO}_3$  (acid-alkali or  $\text{CO}_2$ ) determinations due to variable intrusions of  $\text{MgCO}_3$ ,  $\text{Cl}_2$ , volatile organic material, etc., in the raw materials, often base control upon the more satisfactory information afforded by a complete oxide analysis.

Methods for calculating the compounds have been available for several years and have been generally adopted as substantial time savers. The charts shown afford a similar solution in about the equivalent time and are intended only as an additional means of performing the required calculations.

Chart 1 is useful for reviewing clinker analyses and determining the approximate percent calcium silicate content. It may also be found useful in clinker design. The tri-calcium aluminate, tetracalcium aluminoferrite, calcium sulfate or di-calcium ferrite values may be determined by

calculation or use of another graph designed for these compounds. It is intended only as a rapid means of estimating the  $\text{C}_3\text{S}$  content within, as here drawn, a range of two percent.

The values of  $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$  are aligned and the crossing point at (A) aligned with the  $\text{CaO}$  value. The point of intersection at (B) is transferred parallel to the base line into the curve net and the point of intersection with the percent  $\text{SiO}_2$  ordinate indicates the relative proportion (percent)  $\text{C}_3\text{S}$  and  $\text{C}_2\text{S}$ .

The curve net used is familiar to cement chemists and when drawn to a larger scale offers accurate values. As a means of facilitating the transfer of the point from (B) into the curve net, two vertical folds may be made in the paper, the one along the 26 percent  $\text{SiO}_2$  ordinate being allowed to fall upon line (B), thus shortening the space interval.

Example solution:

Given the values, percent  $\text{Al}_2\text{O}_3$ -7,  $\text{Fe}_2\text{O}_3$ -3,  $\text{CaO}$ -65,  $\text{SiO}_2$ -22  $\text{C}_3\text{S}$  = 4.07 ( $(\text{CaO} - (1.65 (\text{Al}_2\text{O}_3 - 0.64 \text{Fe}_2\text{O}_3) + 1.4 \text{Fe}_2\text{O}_3)) - (7.6 \text{SiO}_2) = 46.1$  percent. The graphical solution gives a value closely approximating 46 percent.

### Clinker Compound Chart

Chart 2 is used for making a rapid estimation of the compound composition of portland cement or cement clinker. The compounds tri-calcium silicate and di-calcium silicate are located on the main chart and tri-calcium aluminate and tetracalcium aluminoferrite on the auxiliary graphs.

In the example outlined the clinker analysis is percent  $\text{CaO}$  — 65.3,  $\text{SiO}_2$  — 22.3,  $\text{Al}_2\text{O}_3$  — 6.7,  $\text{Fe}_2\text{O}_3$  — 3.2. The compound content as calculated by any one of several methods would be,  $\text{C}_3\text{S}$  — 39,  $\text{C}_2\text{S}$  — 37,  $\text{C}_3\text{A}$  — 12, and  $\text{C}_4\text{AF}$  — 10, values being taken to the even percent.

Graphically, a point moves vertically from the percent  $\text{CaO}$  to the percent  $\text{SiO}_2$  curve, horizontally to the percent  $\text{Al}_2\text{O}_3$ , vertically to the percent  $\text{Fe}_2\text{O}_3$ , horizontally through the percent  $\text{C}_3\text{S}$  required to the per-

(Continued on page 236)

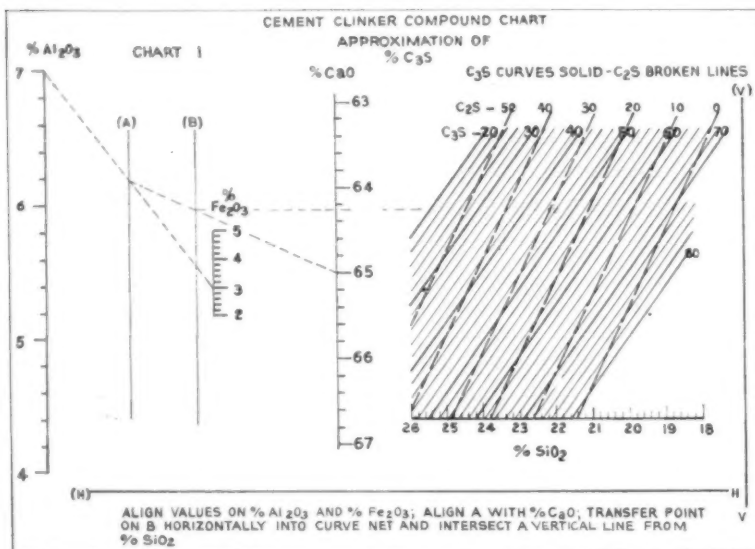
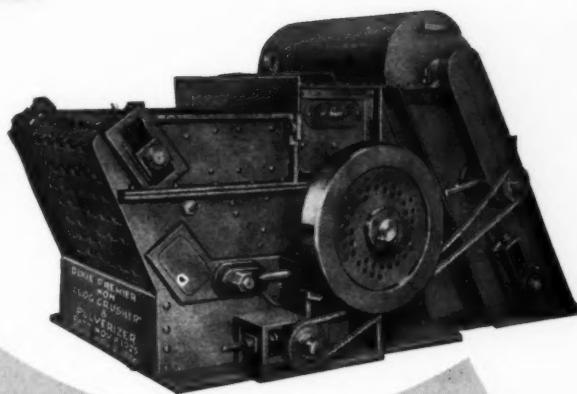


Chart 1 is useful for reviewing clinker analysis and determining approximate per cent of calcium silicate. To use, align values on  $\% \text{Al}_2\text{O}_3$  and  $\% \text{Fe}_2\text{O}_3$ ; align A with  $\% \text{CaO}$ ; transfer point on B horizontally into curve net and intersect a vertical line from  $\% \text{SiO}_2$ .

# Controlled crushing

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# Phosphate Products



An 80-ft. thickener, to the right, which receives overflows from the other equipment, and a 30-ft. bowl classifier may be seen at the left. This is typical equipment found in the Tennessee field

Article III deals with the economics of flotation and hydroseparation for the recovery of fines, and operating and maintenance factors involved in washing equipment

By OTTO H. WUSTRACK

## Phosphate Production Problems

**B**ROWN rock is associated principally with iron, aluminum, silicon and calcium, the first two chiefly in the form of oxides and clays, silicon as complex oxides and calcium as the carbonate. The clays only, are removable by washing which in the higher grade deposits represent the greatest portion of deleterious matter not chemically combined with the phosphate radical. As the grade of muck decreases, flinty and sandy impurities increase and may be as high as 18 percent reported as  $\text{SiO}_2$ . This cannot be removed by ordinary hydraulic methods because of the negligible difference in specific gravity between the silica sand and the phosphate sand. A slight reduction in silica content of the washed rock compared to that in the unwashed muck does show up, however, in the analysis, because the greatest proportion of silica occurs in the finer size ranges, much of which is discharged to settling ponds as waste.

Flotation is to date the only successful method of concentrating high silica muck and has been practiced at the International Minerals Corp., plant at Wales for a number of years on the low grade deposits peculiar to the vicinity. So far the wide application of flotation to brown rock has not been practiced because in most operations the economy has not been justified. Usually less than one-third of the tonnage produced by the washer is suitable for flotation. Unless the original muck is very low in grade, this third does not increase in B.P.L. content by more than 5 to

6 percent. On the other hand the finest sizes of phosphate, namely that from the hydroseparator could be benefited much more, but the chemical consumption and loss to slimes both are too high to make flotation attractive. As miners are forced to take lower and lower grade deposits, however, flotation may well become a necessary adjunct to every washing plant. Market conditions are changing the picture and may force refinements in recovery as they have in the past.

Only a decade ago operators were not greatly interested in the recovery of fines of less than 100-mesh. When however a market was created for these sands because of their lime-silica ratios which were suitable for the electric furnace process of phosphorous manufacture, it became important to recover as much of them as possible. To overcome mechanical difficulties in handling such fine material through the process, nodulizing and sintering were resorted to.

Limestone is hand-picked at the mine, grizzly, and the picking belts inside the washer proper. Sink-float may show promise in displacing lime picking, especially since the cost of common labor has risen so high.

Electrostatic separation which has evidently found some measure of success in concentrating Florida rock, has been experimented with on brown rock, but the technical aspects on the latter are more difficult, and so far the method has not been tried on a full scale. Another possibility is agglomeration-flotation.

At a top price of \$5 per ton for the best grades of washed, dried rock it is evident that any new concentrating methods are imposed by narrow economic restrictions.

### General Washing Scheme

Separation of clay from phosphate with water depends, of course, upon the difference in density, actual or apparent, of the two and their relation to the density of water. Counter-current decantation is used early in the flow sheet to separate the coarser phosphate sands from the free colloidal clay, and later on mechanical separation aids the hydraulic action in making the final and more difficult separations. To make this kind of separation effective the physical ties between phosphate and clay must be broken, or in other words, the muck must first be conditioned. Thus kneading, rubbing, and hydraulic impact are applied before the first decantation operation. Since the force on a freely falling body is proportional to the cube of its diameter and the difference between its density and the density of the medium through which it falls, it follows that the finer phosphate sands are difficult to recover on a tonnage basis. Theoretically, warm water would not only help greatly in conditioning the muck, but would aid greatly in recovering fine sands, but the impracticability of heating from 3000 to 3500 g.p.m. of water flowing virtually in open circuit is obvious.

The accompanying flowsheet is illustrative of some of the features of

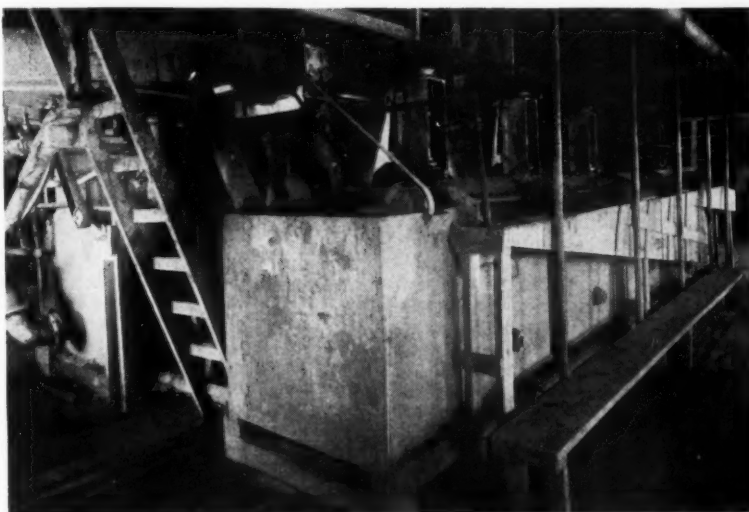


## PHOSPHATE PRODUCTS

several plants, but does not by any means represent the writer's idea of the ideal washer. Washing schemes are still having growing pains, and what is good this year may be junked the next. So far only three pieces of equipment are standard in every plant; namely the double log, the bowl classifier and the hydroseparator; all other devices vary from plant to plant throughout the field.

The first operation is that of bringing the mine run into the washer. Either the muck and lump is washed through a grizzly with a high pressure hydraulic gun, or by a scraper-hauler (Sauerman-Sullivan) or by a combination of the two. Large pieces of limestone and flint not caught at the mine are eliminated at the grizzly. Large phosphate lumps are also broken up, to pass through.

In some plants the first size separation takes place at the sump under the grizzly, in which easily disintegrated muck is picked up by a centrifugal pump and transferred to a decantation unit, and the agglomerated masses of clay, sands and lump are transported to the first conditioning unit by a flight conveyor or similar device. Other plants prefer washing all of the mine run directly into the rotary feed chute of a re-



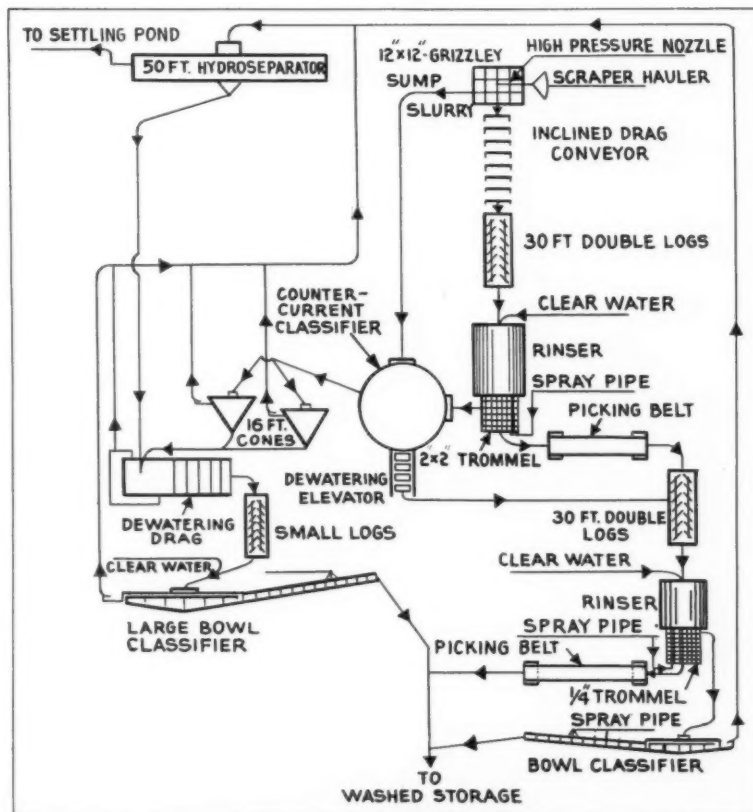
Battery of flotation cells which process minus 30-mesh plus 125-mesh phosphate feed material at one of the Tennessee plants

volving cylindrical washer with the application of large quantities of water. One operator uses a primary crusher fed by an apron conveyor which takes the muck directly from cars before any water at all is added.

The first real conditioning is done in a double log of from 25 to 50 ft. in length. This is one of the heaviest units in the washer scheme and requires a motorized reducer drive of from 50 to 60 hp. to develop the torque to break down the muck masses. This unit is operated in one of two ways: either enough water is added to create a soupy discharge thinner than clay slip, or only enough water is added to facilitate mixing, and having the consistency of thick cream. Proponents of the first claim greater effectiveness in dispersing clay and those of the second claim better loosening of clay from phosphate lump and sands. In the writer's experience operating a wet log has produced more clay balls later on in the process which upon being broken open showed lack of water penetration, indicating that the conditioning performed by the agitating action of the log paddles on a mobile mass was not so good as that of the rubbing and kneading action of the paddles operating on a stiffer mass. Nevertheless, comparison of end results is a more difficult matter and final proof of the advantages of either method is wanting.

The next step is that of rinsing with a large addition of fresh water, usually 300 to 400 g.p.m. for a 40-ton plant. This is done in a 6- to 7-ft. diameter steel cylinder 20 ft. long, equipped with a number of horizontal flights extending the entire length of the shell. The action is similar to that in a rotary dryer, the through rate of load depending upon the speed of rotation and angle of incline. As an aid in dispersing the clay, sodium silicate is sometimes added. The discharge end is equipped with a

(Continued on page 221)



Flow sheet of phosphate rock washing operations

## Survey of Cement Industry

Analysis of typical portland cement companies

THE ACCOMPANYING tabulation is not intended for an investor's guide. It is intended to present a picture of the relative preparedness of the portland cement industry to meet the financial requirements of plant rehabilitation and rebuilding, as shown by the financial statements of the companies listed, at the end of the calendar year 1943. These figures are based on company annual reports as tabulated in Moody's "Industrials for 1944" published about midyear. In only a few instances are figures available for the quarter ending September 30, 1944, or for the 12 months ending September 30, 1944, as some companies prefer to report. From these few we will attempt to show what changes have likely taken place in 1944 and to reflect also what may take place before V-day in the industry as a whole.

There seems to be no way to make the various company figures comparable except on a per barrel of annual capacity basis. Of course, even this comparison is none too good because the figures for annual capacity given are those claimed by the companies themselves, and different organizations have different methods of estimating capacity. However, readers in the industry are fairly well able to judge the correctness of these figures and to discount those in the tabulation if they see fit.

The first item that interests us is the acreage of land required for a cement plant. The following, of course, is a very broad estimate because quarry faces differ greatly in depth and consequently in acreage required to supply the raw materials of manufacture. Some companies estimate their resources of raw materials in millions of barrels, as in the case of Lone Star. This certainly is the most straight-forward approach so far as the stockholders are concerned, since one can make an estimate of the life of the operation. Few people think of the portland cement industry as one that is expending irreplaceable mineral resources, but that is just as true here as it is in any mining operation.

### Acreage Per Million Barrels of Capacity

On the basis of the available figures an annual capacity of 66,400,000 bbl. requires 30,814 acres of property, including mill sites, as well as limestone, clay and shale lands, some of

By NATHAN C. ROCKWOOD

which, of course, have been worked out. This shows an average of 470 acres required per million barrels of annual capacity. Taking Lone Star as an example, with 881,000,000 bbls. of raw materials in reserve and an annual capacity (American plants) of 16,800,000 bbls., the average projected life of its present operations is about 52½ years. Since the average age of its existing American plants is perhaps around 25 years, it would appear that something between 75 and 100 years is the normal life of a cement plant based on its potential raw material resources, if these are used for capacity operation.

One or two companies, notably Lehigh, have been foresighted enough to have acquired limestone properties in anticipation of future operations, some far removed from their present plants. For example, Lehigh owns limestone property to the extent of 4867 acres at Gunville, N. Y.; Anniston, Ala.; Wellston, Ohio; Oxford, N. J.; Saylorsburg, Penn.; Lexington, Va.; Ocala, Fla.; West Coplay, Penn.; Bath, Penn. Giant owns property at Poughkeepsie and Jordan, N. Y. The Universal Atlas Cement Co. is believed to have a large acreage of undeveloped limestone property.

### Present Plant Valuation Per Barrel

The next item of general interest is the extent to which the existing plants and properties have been depleted and depreciated. The percentage depreciated varies between 29 and 81 percent, with the majority better than 50 percent. The case of the 29 percent depreciation is not typical because, while the plant is not a recent one, its re-valuation is recent. If one deducts the current assets per barrel, the last column in the tabulation, from the depreciated plant value per barrel in the seventh column, it is readily seen that some companies are in a very strong financial position. On that basis Pennsylvania-Dixie would have a present (December 31, 1943) plant valuation of only 13 cents per barrel of annual capacity.

The significance of these depreciated plant valuations per barrel of annual capacity is apparent when one reflects that a new plant today would represent an investment of

probably \$3.00 to \$3.50 per barrel. The plants of twenty to twenty-five years ago cost \$2.50 to \$2.75 per barrel. It shows that the old established companies can afford to spend considerable for rebuilding and rehabilitation and still have relatively much less fixed capital invested than a competitor with an entirely new plant. If the old plant is well designed, it can be rebuilt or re-equipped to be the equal of a new plant, except possibly for some saving in labor cost, although it is entirely feasible to install push-button and automatic controls in older plants.

### Cash Position

In the matter of ratio of current assets to current liabilities the industry, as of January 1, 1944, appears on the whole to be quite strong. The current assets include inventory, which in the case of the cement industry includes unfinished (clinker) and finished product, repair and maintenance supplies, and bags. Roughly, perhaps, this asset is divided more or less equally in these three ways.

Now, as to the effect of 1944 operation on the statistics tabulated, we have the third quarter statements of only two or three of the larger companies. For example, for the 12 months ending September 30, 1944, Pennsylvania-Dixie had a net deficit of \$108,737, yet its net plant property valuation was reduced from the figure given in the tabulation for December 31, 1943 (\$6,146,387) to \$5,819,563, as of September 30, 1944. This would reduce the present per barrel valuation to 48 cents. The net current assets on September 30, 1944, were \$4,407,257 as compared with \$4,503,304 on December 31, 1943. It should be noted that both figures for net plant valuation include special depreciation and depletion reserves in addition to the regular allowance, or percentage, under revenue bureau regulations. The 1944 operating loss and reduction of current liabilities from \$675,846 on December 31, 1943, to \$529,355 on September 30, 1944, were at the expense of cash assets, which were reduced from the December 31 balance sheet of \$3,039,490 to \$2,441,501 on September 30. This is approximately \$600,000, or 1944 operations added at least 4.8 cents per barrel of plant investment, if you analyze it as we

(Continued on page 226)

# CEMENT FINANCES

## FINANCIAL ANALYSIS OF SOME TYPICAL CEMENT COMPANIES

COMPANY	PLANTS AND REAL ESTATE	ORIGINAL VALUATION OR BOOK VALUE	DEPRECIATED VALUATION (NET PROP. ACCT.)	PER-CENT DEPRECIATED	RATED CAPACITY BBLs.	PRESENT PLANT VALUATION PER BBL.	CURRENT ASSETS	CURRENT LIABILITIES	RATIO OF CURRENT ASSETS TO LIABILITIES	NET CURRENT ASSETS IN EXCESS OF CURRENT LIABILITIES	INVENTORY ASSETS (INCLUDED IN CURRENT ASSETS)	NET CURRENT ASSETS PER BBL.
Alpha	9 Plants (incl. 1 inactive) 6157 acres	\$33,520,566	\$10,755,867	68%	12,000,000	\$0.90	\$9,992,277	\$1,247,889	8 to 1	\$8,744,388	\$1,865,289	\$0.73
Bessemer	1 Plant 50,000,000 tons Limestone	2,836,930	1,430,708	49%	1,500,000	0.95	641,475	224,446	2.9 to 1	417,029	243,813	0.28
Calaveras	1 Plant 3000 acres	4,027,665	1,985,480	51%	1,500,000	1.32	1,110,354	325,345	3.4 to 1	785,009	521,774	0.52
Consolidated	2 Plants 200 acres of Limestone	4,442,247	1,915,251	57%	3,000,000	0.64	820,807	277,534	3 to 1	543,273	275,729	0.18
Coplay	2 Plants	5,003,677	2,285,858	54%	2,400,000	0.95	739,099	175,765	4.2 to 1	563,334	531,640	0.23
Diamond	1 Plant 750 acres	1,380,592	983,204	29%	931,000	1.05	384,861	36,271	10.6 to 1	348,590	167,291	0.37
Florida	1 Plant 425 acres	5,018,435	2,776,736	45%	1,500,000	1.85	1,540,060	110,533	14 to 1	1,429,527	365,089	0.95
Giant	1 Plant Land at Poughkeepsie and Jordan, N. Y.	2,195,406	800,213	63%	1,300,000	0.61	724,849	48,191	15 to 1	676,658	295,537	0.52
Hercules	1 Plant	5,323,041	2,271,064	57%	2,200,000	1.03	556,480	101,563	5.5 to 1	454,917	353,438	0.21
Ideal	8 Active Plants 2 abandoned or dismantled	21,939,248	10,631,206	51%	10,000,000	1.06	7,896,195	724,549	10.9 to 1	7,171,646	1,065,404	0.72
Lawrence	2 Plants	9,235,685	4,280,766	54%	3,800,000	1.13	2,053,391	116,394	18.5 to 1	1,942,997	928,380	0.51
Lehigh	13 Active Plants 10,218 acres and 4867 acres unused property	47,761,088	20,868,089	56%	21,100,000	0.99	14,911,237	2,043,567	7.3 to 1	12,867,670	4,400,919	0.61
Lone Star	10 American 5 Latin Am. Am. raw mtl. 881,000,000 bbl.	71,741,377	25,469,505	64%	25,000,000 16,800,000 domestic	1.02	18,540,369	2,898,409	6.4 to 1	15,641,960	6,897,409	0.62
Long Horn	1 Plant 475 acres	3,703,529	1,954,526	47%	1,500,000	1.30	900,987	250,475	3.6 to 1	650,512	231,041	0.43
Medusa	6 Plants	18,902,015	6,715,238	64%	8,000,000	0.84	3,611,880	624,037	5.8 to 1	2,987,843	2,115,620	0.37
Missouri	2 Plants	10,795,025	4,647,104	57%	4,500,000	1.03	2,817,901	237,371	12 to 1	2,580,530	377,343	0.57
Monolith* (Two companies)	2 Plants	7,426,446 12,130,458	3,275,222 7,781,871	56% 35%	2,720,000	1.20 2.86	1,603,657	595,658	2.7 to 1	1,007,999	968,877	0.37
Nazareth	1 Plant	5,134,224	1,976,647	61%	2,000,000	0.99	1,106,916	115,867	9.6 to 1	991,049	481,110	0.50
North American	3 Plants	17,331,459	5,696,272	67%	4,450,000	1.28	2,195,162	186,779	11.7 to 1	2,008,383	1,068,824	0.45
Oregon	2 Plants		2,547,200		800,000	3.19	689,952	417,511	1.7 to 1	271,441	230,523	0.34
Penn-Dixie	8 Plants 6306 acres	33,037,853	6,146,387	81%	12,200,000	0.50	5,177,150	673,846	7.6 to 1	4,503,304	1,448,993	0.37
Petokey	1 Plant 507 acres	5,246,891	2,176,935	58%	1,500,000	1.45	550,651	62,830	8.8 to 1	487,821	417,784	0.33
Riverside	2 Plants 850 acres	12,355,688	5,855,043	53%	4,500,000	1.30	2,482,069	783,964	3.2 to 1	1,698,105	1,101,313	0.38
Santa Cruz	1 Plant 1100 acres	No	Data		2,000,000				No data			
Signal Mountain	1 Plant 450 acres	2,909,710	1,217,907	58%	1,500,000	0.81	578,688	117,664	4.9 to 1	461,024	326,898†	0.31
Superior	1 Plant 376 acres		3,915,655		3,200,000	1.22	3,324,031	877,805	3.8 to 1	2,446,226	920,807	0.77
Universal Atlas	9 Plants 7201 acres				33,000,000							
Wolverine	2 Plants	1,627,008	368,255	77%	1,080,000	0.34	658,810	29,243	22.6 to 1	629,567	189,578	0.58

\*Also carried on balance sheet as assets are \$2,213,532 for limestone property at Monolith, Calif., and \$2,490,480 at Laramie, Wyo., for limestone property. This total of \$4,704,012 (depleted at Laramie by \$379,363) is shown in figures below with corresponding statistics.

†Maintenance supplies and cloth sacks carried as capital assets at \$287,702.



# Lime

## Growing Demand in Chile

**Agricultural, chemical, and construction industries call for expansion in lime industry**

**T**HIS ARTICLE deals briefly with the lime industry in Chile, and it was requested by Victor J. Azbe dur-

ing his recent visit to this country. The most important limestone deposits are found in the zone between

**By R. ZORRILLA and  
S. BARANOVSKY\***

Tarapacá and Colchagua, or more exactly, between latitudes 20 deg. and 35 deg. S. The deposits usually occur as sedimentary strata of sea origin, more or less metamorphosed, due principally to the presence of silica from the intrusion of igneous rocks. Their age dates back to the Mesozoic era. The size of the deposits is comparatively small, seldom over five million tons, although a few of them are quite large, up to tens of millions of tons in size. The  $\text{CaCO}_3$  content is between 75 percent and 85 percent, or less, and magnesium is not commonly found.

Calcium carbonate is also found in limestone tufas or travertines in the Andes, hydrothermal veins, and quaternary marine shell strata, located along the continental coast line or in certain islands. All these deposits are very small in size.

At the southern tip of Chile, in the island of Diego de Almagro, around latitude 51° 30' S., there is a marble deposit of considerable size, but it is in a desert region of difficult access, and far from the markets.

### Use of Limestone Products

The chief consumer of calcium carbonate is the cement industry, which requires over 550,000 tons of limestone annually. Naturally, the demand will be greater when new plants are installed or the existing ones are enlarged. Then, come the metallurgical establishments, especially copper foundries, which require over 100,000 tons of calcium carbonate or limestone, which they obtain from their own mines.

The third largest consumer is the agricultural industry, using over 85,000 tons of calcium carbonate and ground quicklime and slaked lime. Most likely, the limestone demand for agricultural purposes will continue to be high for some time yet, on account of the acidity of the soils in the Province of Talca (lat. 35° S.). It has been estimated that after alkalizing the soils, 1,000,000 tons will be required to maintain them in good condition.

The present tendency is to use calcium carbonate instead of quick or slaked lime in agriculture, due perhaps to the lower price transportation facilities and easy handling. The fertilizer specifications are as follows:

*Grinding*—100 percent must pass a

\*Mining engineers, Corporation for the Promotion of Production, Santiago de Chile, Chile, S.A.

# ROGERS

## CRUSHERS, QUARRY AND GRAVEL PLANT EQUIPMENT

*Rogers Equipment Includes Portable  
and Stationary*

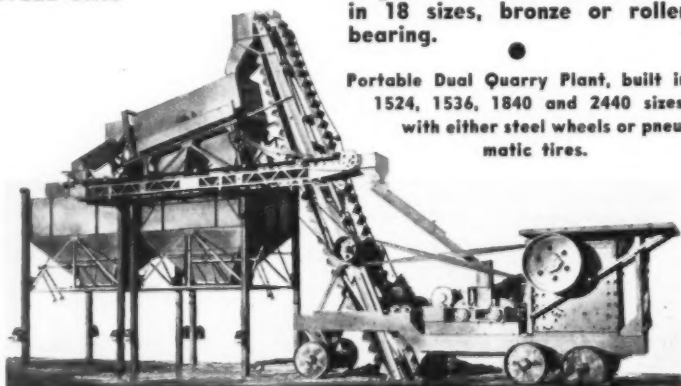
**QUARRY PLANTS  
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## LA PIEDRA CALIZA Y LA INDUSTRIA DE LA CAL CHILENAS

• Los autores concentran su atención en este artículo principalmente a la piedra caliza y la cal en Chile, así como también a los usos de estos productos. El descubrimiento de depósitos de piedra caliza es discutido geológica y geográficamente. Los consumidores principales son la industria de cemento, la industria metalúrgica y la agricultura, en el orden dado. Aquí se ve otra vez que pudieran usarse ventajosamente más materiales para fertilizar las tierras y que la venta de cal calcinada se retarda por los altos costos de combustible y la calidad inferior de la piedra caliza del país.

3mm. sieve (approx. 6 screen Tyler). At least 80 percent must pass a No. 50 sieve (approx. 35 Tyler).

**Analysis**—Calcium carbonate must not be less than 75 percent. Quick and slake lime must have not less than 40 percent free CaO, or available lime.

To promote the use of lime fertilizers, the government of Chile has set special reduced railroad tariffs and is studying the possibility, through the Corporation for the Promotion of Production, of lending money to the farmers who want to use lime fertilizers.

Lime was used for construction purposes some time ago, but it was later replaced by portland cement. At present it is only used in small amounts for plaster and stucco. But the high price of cement and its shortage have again compelled the manufacturers and the government to consider the possibility of using lime in masonry construction. To be accepted on the market, limestone products will have to meet certain requirements which are now being studied.

Industrial and chemical lime is made at small plants, usually owned by the same concerns that make use of these products. The raw material of best quality comes from sea shell deposits, travertines and veins. Except for a few exceptions, the quality of these limes is very poor, and for this reason probably they would not be accepted in highly industrialized countries. The principal defects are their low free CaO content and the great amount of impurities coming usually from the uncalcined CaCO<sub>3</sub>.

The following table indicates the distribution and consumption of cal-

(Continued on page 202)

## Saving Metal, Money and Time With Conservation Welding

Incidental to war production an increasing number of worn ferrous equipment parts—the sort which used to be summarily



W-4. A rehabilitated manganese steel 126" crusher mantle. Amsco Nickel-Manganese Steel Filler Bars were sawed by hand to produce the proper contour, and were tacked onto the mantle, using Amsco Nickel-Manganese Steel Electrodes. Each bead was preened thoroughly. Total rehabilitation cost was \$275.00.

scrapped — have been salvaged for further useful life with Amsco Welding Products. This practice has saved large amounts of scarce metals and obviated the difficulties and delays attending the procurement of new parts. At



W-103-B Sprockets from a tractor which were put in service at the same time. The one on the left had been rebuilt with Economy Hardface; the one on the right was a brand new sprocket. Note that the new one is worn to such an extent that it was necessary to resurface it with Economy Hardface, while the welded sprocket needed no repairs whatsoever.

the same time, many additional establishments have become familiar with the substantial reductions in replacement costs afforded by Amsco Conservation Welding.

Worn equipment parts which have been restored with highly wear-resistant Amsco welding materials often give as long service as new parts, and at considerably less cost. Substantial savings have also been obtained by hardsurfacing new parts with Amsco Welding Products which, having far higher wear resistance than the body metal, afford greatly increased service life. As replacement costs will assume added importance in the postwar period, conservation welding will be still more widely practiced.

A few examples of Amsco Conservation Welding are pic-



10-C. This brick machine auger tip served over a year after being built up with Amsco Nickel-Manganese Steel Rod and hardsurfaced with Amsco No. 459 Rod, as compared to the usual performance of only a few months before replacement. A new part costs \$45.00. Total salvage cost was \$31.00.

tured. Others, with full information on Amsco Welding Products, are shown in Bulletin 941-W. Send for your copy.

**Amsco**  
AMERICAN MANGANESE STEEL DIVISION  
Chicago Heights, Illinois  
FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO.  
OFFICES IN PRINCIPAL CITIES

AMERICAN  
**Brake Shoe**  
COMPANY

Limestone:	Metric Tons	Price	Price, per Metric Ton
Cement .....	554,500	\$13,862,000	\$25
Agriculture (pulverized) .....	22,100	4,420,000	\$200
Metallurgy and other uses .....	*105,100	2,627,000	\$25
Calced Lime:			
Agriculture .....	63,400	19,020,000	\$300
Other uses .....	(†)	(†)	(†)
Total .....	745,100	\$39,929,000	....

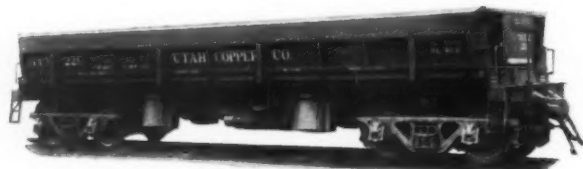
\*Incomplete statistics.

†Insufficient records.

‡Estimated value.

§Including sacks.

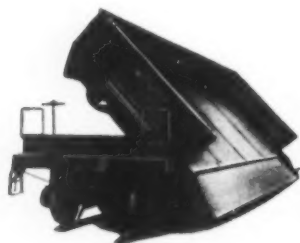
## Steelcar ROLLING TRUNNION Automatic AIR DUMP CARS



Generally the development and operation of open pit mines involve the continuous stripping of large amounts of overburden that have to be hauled to waste dumps. Pressed Steel air dump cars in various types and capacities are used extensively in this work.

As the overall cost of operation frequently determines the success or failure of such mines and since loading, transportation and dumping of the overburden constitute important elements of cost, it becomes a matter vital to the success of the project to select cars especially adapted to the requirements.

In most cases, the largest car that can be used will prove the most economical. The initial cost per cubic yard of car capacity will be less, maintenance cost on the same basis will be lower, a better ratio of dead weight to payload will be secured, the tonnage per pound of locomotive tractive effort will be correspondingly greater and power shovel operation will be more continuous.



Write for Bulletin No. 72-C—containing illustrated, informative information on AIR DUMP CARS.

**PRESSED STEEL CAR COMPANY, INC.**  
INDUSTRIAL DIVISION  
PITTSBURGH, PA.

## Lime in Chile

(Continued from page 201)

cium carbonate and lime during 1943, with their respective selling prices in Chilean money (\$31 Chilean pesos to a dollar):

The production of the four leading lime plants, including pulverized limestone and lime, is 120,000 tons per year, or an average of 15,000 tons per plant, a very small production, indeed.

### High Production Costs

The high cost of production is chiefly due to the very limited demand and the fact that mechanized equipment is not justifiable. Other causes of the high cost of production, especially of those products used in agriculture, are: (1) expensive sacks and lack of means of transportation; (2) strict grinding specifications required by the law on agricultural limes; (3) lack of roads and equipment for spreading the fertilizer on the ground; (4) lack of appropriate warehouses for storing the products in different points of the country; (5) and high distribution cost, with the result that very often the retailers make a higher profit on the product than the manufacturers. The only advantage the lime industry has is cheap hand labor and reduced railroad tariffs.

Before finishing this article, it might be of interest to point out some other important factors affecting the production of calcined lime. They are the high price of fuel, raw materials poor in  $\text{CaCO}_3$ , and inefficient kilns.

With very few exceptions, the kilns are ovaloid in shape, similar to the old Tell type. The height, between door and grate, varies from 9 to 12 meters and the maximum diameter is about 3 meters. Some of them have an excessive width of from 4 to 5 meters. They have no artificial draft or chimney. They only have one central discharge door and the grate is formed by rails. The production for this type of oven is about 20 tons of quicklime per day.

In most of them the system of mixed fuel is used, consisting generally of fine coke, mixed, sometimes, with fine bituminous coal or wood. The process of limestone calcination is usually very incomplete. Oftentimes the lime comes out with from 10 to 20 percent  $\text{CaCO}_3$ . The fuel consumption, with fine coke of 5,500 calories heat value, is estimated at about 180 kilograms per ton of quicklime produced.

### Purchases Block Concern

V. A. McMILLAN of Grand Rapids, Minn., has purchased the concrete block business formerly operated by L. P. Lomholt at Grand Rapids. Mr. Lomholt expects to get back in business again after the war.



## New Markets

(Continued from page 180)

to sell. I anticipate this situation will continue."

### Industrial Sands

Industrial sand producers have been through a period of product development during the war but anticipate some new markets or variations to existing markets. A Pennsylvania producer wrote:

"We expect few new markets in our territory, and except for new grades of the material now being produced, no new products will be sold."

A producer of a varied line of industrial sands in the Southwest wrote:

"We hear rumors of new post war markets in our territory but we know of no certain new post war markets in our territory."

### Lime

In the article on specifications, the remarks of a producer in Ohio on autoclaved building limes which will be merchandised were quoted. He also added:

"We also developed a special superfine hydrated lime for dusting and spraying which has been marketed for several years and which will be in good demand after the war. We expect to cover the territory east of the Rocky Mountains after the war same as we have done in years past. We also expect to sell the new products referred to above."

### Miscellaneous Rock Products

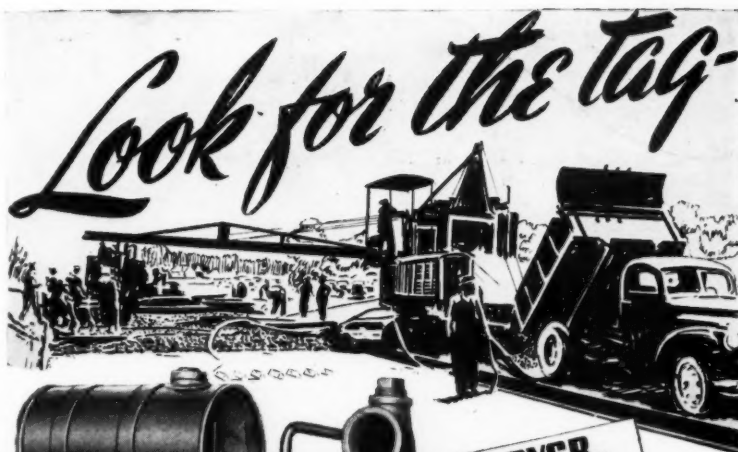
A talc producer wrote of several new expected postwar markets as follows:

"The insecticide industry is growing very fast. Our material is used as a diluent. Many furnaces will be built and repaired. Our product makes a wonderful plastic refractory. We expect to sell more to makers of storage battery cases, and tire makers."

In many of the letters, producers termed housing and paving as "new markets," probably because these producers had little or no normal flow of business since W.P.B. restrictions on labor and materials. Some companies indicate that they are developing quite a few new products but they are still in the planning stage of development. Evidently, judging from replies to our inquiry, the farm market will be emphasized heavily by many producers of ready-mixed concrete and concrete products as well as by producers of aggregates.

### Leaves Mining Division

ARTHUR S. KNOZEN, director of the mining division of the War Production Board, has resigned his position. Mr. Knozen is vice-president of the Joy Manufacturing Co.



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each tested*

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Look for a Carver when you want rugged performance on road jobs. Write today for catalog, prices, deliveries, and name of dealer in your territory. No obligation, of course.

*...the Road Contractor's Pump*

**THE CARVER PUMP CO.  
Muscatine, Iowa**

**CARVER CENTRIFUGAL  
Certified PUMPS**



## Modernization

(Continued from page 174)

wrote: "After the war, we expect to install a dryer and screens so that our product can be more accurately sized for special markets."

Another, from West Virginia, said: "We will add a partial unit in our plant to correct a bottleneck, which will consist of a new chaser mill and two classifiers."

From the Southwest, a producer of industrial sands is planning extensive modernization as follows:

"We expect to install more screens and grading equipment to better meet the customer's requirements in the post-war period. We also expect

to replace some of our old mining equipment with new loading machines, new trucks, a bulldozer and compressor as soon as the new machinery is again on the market."

### Slag and Lime

Typical of the types of plant revisions contemplated in lime plants is this excerpt from a letter received from a producer in Ohio:

"We contemplate installing after the war a tube mill, roller mill, air separator and dust collector, three transformers, and will also make other minor additions and improvements. The purpose of the tube mill is to make masons lime which has an immediate plasticity factor after

soaking of 350 in terms of the Emley plasticimeter. It can be mixed with cement and sand and used immediately with excellent results."

A producer of blast furnace slag in the South, who anticipates no radical changes in specifications, sums up his production needs in the following statements:

"There will be some minor changes in specifications, as there always are from year to year with different engineers handling the specifications, but no radical change is anticipated. The only installations contemplated in the way of equipment and machinery are as new equipment is needed to replace our worn or obsolete equipment, changes may be made.

"The marketing area will remain reasonably unchanged in my judgment, although if the program of highway expenditures is carried on to a peak that has been discussed, in my judgment it will be unsound for the long pull in our industry, as it will create abnormal production from local and wayside points that may result in poorly graded materials."

### Concrete Products

In the foregoing, letters were quoted, in part, that indicated plant modernization for some definite objective, such as the meeting of new trends in specifications, general improvement of plant efficiency, increase in production capacity, etc. Many others were received, practically all of which indicated a need for new equipment. Manufacturers of concrete masonry units, almost without exception, expressed their need for new block machinery and a number indicated that new power lift trucks, curing racks, bulk cement bins, conveyors and cutting saws for concrete were required post-war.

Letters from aggregates producers, not quoted in this article, expressed needs for vibrating screens to replace revolving screens, power shovels, tractors and blades, cranes, trucks, primary and fine reduction crushers, draglines, concrete pipe machines, concrete block machines, compressors, portable aggregates plants, etc. It is surprising how many aggregates producers are planning to produce concrete masonry units after the war, and it is evident from letters received that contractors' type equipment such as tractors with bulldozers is destined to become standardized equipment in medium and large-sized aggregates plants.

### TVA Phosphate Plant

DR. COPSON of the T.V.A. recently announced that the government plant for the production of fused or defluorinated phosphate is now nearing completion. The plant is located north of Columbia, Tenn.

## STRAYER PORTABLE CONCRETE PLANTS



Make 20 to 40 yards of specification concrete per hour on the job. One-man operation and a helper to

20 to 40  
YARDS  
PER  
HR.

handle cement bags. One hour to set up. Move from job to job. Write for booklet today.

## ERIE

THE COMPLETE LINE

## BUCKETS



Hundreds of Erie Buckets are shipped monthly for war uses. Straight line bucket production experi-

ence means better buckets for post-war and fast delivery. Investigate the complete Erie line now.

## ERIE STEEL CONSTRUCTION CO.

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## Anza Mill

(Continued from page 77)

workman turn a wooden bowl on a crude lathe. The shavings and sawdust fell within the spinning bowl and stayed there in an inverted cone. Thrusting the end of a stick into this cone, Mr. Ainsa found that it was rapidly worn or ground off, from which he drew the logical conclusion that if wood shavings could grind wood, rock or ore particles could grind other rock particles. Having lived all his life in mining districts he was familiar with current practice and machinery and realized the novelty of his idea.

The inventor succeeded in constructing a small mill of his own design, mounted on a small truck, and with it he visited mine after mine in California to try it out on all kinds of ore. After spending \$50,000 he succeeded in getting an order for a 300-ton per day mill for the Elizalde cement plant in Nevada, but war conditions compelled the plant to shut down before the Anza mill had been put into operation. At 78 years of age the inventor went to work as a mechanic in a San Francisco shipyard.

Since then the Roger's Lake Mining Co., Rawhide, Nev., has carried on experiments with the original test mill, and is said to be preparing to install a 300-ton a day machine. Mr. Ainsa has now turned over his patent rights to Coastal Engineering, Ltd., which is preparing to manufacture and market the new mill in 5-, 25-, 50-, 100-, 300- and 500-ton per day sizes. Experimental data on the 300-ton mill is given in the accompanying table. Obviously, if long-term experience bears out these data, a real revolution in grinding practice has been accomplished.

## Specifications

(Continued from page 78)

In the industrial sand industry, the following comments from an Eastern producer of foundry sands probably would be typical for many companies producing unprecedented heavy ton-nages for war industries:

"The exacting requirements of the foundries producing war goods has made it necessary for us to equip our plants to meet severe specifications. In the post-war period we believe that specifications for our products will not be any more rigid and possibly not as rigid as they are right now. We furthermore anticipate a decline in production, although this decline may be partially cushioned if reconversion is coordinated with the slowing up of war production."

Another article in this issue summarizes some of the types of plant installations to be made, in re-equipping operations for postwar business, with pointed comments from some of Rock Products' subscribers.

# Eagle Washers

## Remove Adobe, Sticks and Leaves



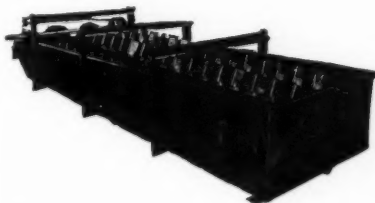
Writing about their second Eagle Screw Washer, the plant superintendent of a Colorado gravel company advises, "We not only eliminate practically all of the sticks and leaves which may be in the gravel, but our Eagle Screw Washers also rinse the gravel free of dirty water and adobe that may be sticking to its surface . . . Our material costs are very low with your machines and we are very glad to recommend them to anyone who may be in the market for an efficient gravel washer."

Complete details in Catalog No. 44. Get a copy and read how others are producing premium sand and gravel with Eagle Equipment.

## EAGLE IRON WORKS

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Des Moines, Iowa

## Log Washers for Tough Classifying Jobs



If your material requires greater scrubbing and cutting action and a longer washing cycle, specify Eagle Paddle Type Log Washers. Featuring the same design and operating advantages as Eagle Screw Washers, Eagle Log Washers provide the thorough scrubbing required by firmly cemented or clay bound sand and gravel. Single and Twin units in many sizes. Send for details.

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"SWINTEK" DREDGE LADDERS — SCREW WASHERS  
LOG WASHERS — DEHYDRATORS — SAND TANKS  
CLASSIFIERS — REVOLVING SCREENS



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## Crushed Stone School

NATIONAL CRUSHED STONE ASSOCIATION held a Short Course for Crushed Stone Salesmen on December 4, 5 and 6 at the DeWitt Clinton Hotel, Albany, N. Y. In addition to sales and engineering representatives of the industry, the course was open to architects, contractors and engineers. On the first day, Harry R. Hayes, secretary and engineering director of the New York State Crushed Stone Association, presided. Dr. John G. Broughton, acting state geologist, New York, spoke on the subject, "The Geology of Rocks in New York State." The general subject, "The Measurement of Gradation of Aggregates,"

was covered by E. W. Bauman, on Sampling; J. E. Gray, on Standard Sieves, Methods for Making Sieve Tests, Methods for Expressing Gradation, and Fineness Modulus; and A. T. Goldbeck, on Simplified Practice Standards for Size, Size Tolerances and Why Necessary."

The afternoon of the first day was devoted to a demonstration of the testing of rock, concrete and bituminous mixtures in the New York State Public Works Laboratory, and a review of the test methods and their significance by Ira Paul, Director of Public Works Laboratory.

A. T. GOLDBECK, engineering director of the association, presided over

the second day's morning session, December 5, in which the following topics were discussed: Specific Gravity, True, Apparent, and Bulk, by A. T. Goldbeck; How to Use Bulk Specific Gravity for Determination of Solid Volume and Voids in Aggregates, J. E. Gray; Examples of Use of Solid Volumes for Calculation of Stone Required for Macadam Base, E. W. Bauman; How to Proportion Concrete for Use in Structures, A. T. Goldbeck; Examples of Use of Proportioning Method and Its Application for Comparing Concrete Costs, J. E. Gray; and Aggregates and Their Effect on Fireproofing of Structures, E. W. Bauman.

HARRY R. HAYES presided at the afternoon session. The subject, "The Characteristics of the Various Grades of Bituminous Materials and the Types of Construction to Which They Are Suited," was discussed by George H. Dent, on Asphalts, and George E. Martin, on Tars. "Aggregates and Methods for Using Them in Bituminous Road Construction" was the general topic covered by A. T. Goldbeck, on Surface Treatment; V. L. Ostrander, on Bituminous Concrete, Hot and Cold Mixes, and Bituminous Macadam.

E. K. WEBSTER, president of the New York State Crushed Stone Association, presided at the session on Wednesday. "Concrete for Highways" was the first subject on the program, and was presented by A. T. Goldbeck. "How Concrete Proportions for Highways are Determined for a Given Beam Strength" was the general topic with J. E. Gray giving a Short Resume of Solid Volume Calculations; A. T. Goldbeck explaining a Method for Proportioning Highway Concrete; and E. W. Bauman pointing out the Influence of Aggregates on the Behavior of Highway Concrete—Temperature Effects, Bond, and Durability.

## Sand-Lime Brick Production and Shipments

Four active sand-lime block and brick plants reported for November and four for October, statistics for which were published in December, 1944.

### AVERAGE PRICE FOR NOVEMBER

	Plant Price	Delivered Price
Detroit, Mich. ....	.....	\$17.00
Saginaw, Mich. ....	\$15.00	....
Grand Rapids, Mich. ....	....	16.20
Seattle, Wash. ....	19.50	21.50

### STATISTICS FOR OCTOBER AND NOVEMBER

	*October	†November
Production .....	1,371,845	1,238,445
Shipments (rail) ..	400,000	418,000
Shipments (truck) ..	1,016,845	815,445
Stocks on Hand....	163,000	61,000
Unfilled Orders ....	900,000	400,000

\*Four plants reporting: incomplete, one not reporting stocks on hand and two not reporting unfilled orders.

†Four plants reporting: incomplete, one not reporting stocks on hand and two not reporting unfilled orders.



**lies the Secret**  
**that Makes Wheels Pull**  
**instead of SPIN**

## The THORNTON

### Automatic-Locking DIFFERENTIAL

—greatest advance in differential design—is now available to truck owners who must keep their vehicles moving . . . pulling on through extremely tough surface conditions the year 'round.

This war-tested *Locking* differential stops one wheel spin which normally stalls a vehicle in snow . . . sand . . . soft fields . . . mud . . . muck, etc., because both wheels *must* rotate when power is applied.

Allows full maneuverability of vehicle. Installed easily on trucks for pull, safety and where time or delivery schedules must be maintained. Use coupon to obtain full facts *free*.

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# ROCK PRODUCTS' CONCRETE PRODUCTS

and Cement Products



*Photo Courtesy Universal Atlas Cement Co.*

• Overseas Army Post Office on Long Island, New York. National Brick Company furnished 500,000 masonry units in 60 days for its construction. The building is 976 ft. long with walls comprising 4-in. buff-colored units on the face with a 2-in. air space followed by an inner wall of 8-in. cinder concrete block



# There's a Great Day Coming

## —and a great new line of

# STEARNS Block Machinery

This letter, sent to all STEARNS representatives, carries a vital message to all Concrete Products Manufacturers.

1. A revolutionary new block making method
2. Will be ready for post-war block plants
3. Adapted to present Joltcretes

**In War - In Peace**  
**STEARNS LEADS**

Buy a machine  
of  
Proven Worth

*The Pioneers*  
and Developers of vibration block equipment. Also a complete line of ramp machines and mixers. Made in Adrian, Mich.—recognized for a quarter of a century as Block Machinery Headquarters.

**STEARNS**  
MANUFACTURING CO. - ADRIAN, MICH.  
Gene Olsen, President

October 21, 1944

To all Stearns Representatives:

For the third time Stearns employees have won the Army-Navy "E" Award for excellence in war production. Rightfully, you and all the others in the Stearns Organization are proud of this distinction, unequalled in the Concrete Products Machinery Industry.

In addition to its production of war goods, Stearns has furnished Concrete Machinery maintenance parts and new equipment at almost peace time volume.

Furthermore, our research has developed a new and revolutionary improvement in the method of manufacturing concrete blocks.

This amazing new process affects every block plant in America. It is now being incorporated in a great new line of Stearns block machinery that will be announced at the close of the war. Appropriate parts will be available to make this new process adaptable to all the Joltcretes already installed.

As V-Day draws closer, the demand for block equipment is exerting tremendous temptation to ease off on war production. Let others yield - Stearns will not. We will never let down the boys on the fighting fronts. We're sorry you will have to wait a little longer for these new machines. Meanwhile make use of your mature experience by helping customers get the most out of their present equipment - and showing them the advantages of waiting for Post-War improvements and quality.

Cordially yours,  
STEARNS MANUFACTURING CO., INC.  
*Gene Olsen*  
President - General Manager

**STEARNS**  
MANUFACTURING CO. - ADRIAN, MICH.

GENE OLSEN, PRESIDENT

Designers and manufacturers of modern Concrete Products Plant Equipment: Vibration and tamp-type block and brick machines • Mixers • Skip Loaders

Licensed under the basic Gelbman Vibration Patents

## AIR-ENTRAINING Portland Cement in Concrete Block

By H. G. FARMER\*

**Use of air entraining cement in the manufacture of concrete products reduces breakage, improves appearance, lowers water absorption, and increases compressive strength**

THROUGH many actual projects built over the past six years it has been definitely proved that air-entraining portland cement when used in concrete pavement construction produces a slab which exhibits greater resistance to scaling due to the action of freezing and thawing and the use of de-icing agents than does regular portland cement concrete under the same conditions of exposure. Some concrete-block manufacturers learned of this, and it was only natural that they should ask themselves whether air-entraining cement might improve the appearance and quality of their products. If these desirable improvements could be accomplished without increasing the cost of production they were interested. They decided that the best way to determine whether this was true was actually to try out air-entraining cement in their plants.

To make a direct comparison a number of concrete-block manufacturers substituted air-entraining cement for regular portland cement in a portion of their production and found that it reduced breakage in handling block, generally improved

appearance, increased the ability of the block to withstand or resist the passage of water through them and generally increased the compressive strength of the block.

As a result, an increasing number of concrete-block manufacturers are now using air-entraining cement for their entire production. No unusual changes in manufacturing methods have been found necessary in plants changing to air-entraining cement. No additional expense has been incurred. Some plants report savings in operation costs where breakage in handling the green block has been greatly reduced.

What are the reasons for the gains in both quality and economy? Briefly, it is because for a given concrete-block mixture air-entraining portland cement permits the use of more mixing water per bag of cement than is possible with the same mixture using regular portland cement. Some producers of concrete block report using as much as one-half gallon more water per bag. At the same time this mixture is of such consistency that it can be satisfactorily handled through the block machine. The established rate of production can still be maintained, and in some instances it has been considerably increased.

### Determining Role of Water

The optimum amount of mixing water which will produce maximum strength in concrete block along with the desired consistency will depend on the kind and grading of the aggregate, the richness of the mix and the block machine used. With some block machines too wet a mix may cause concrete to stick and not feed uniformly into the mold box. Furthermore, too much water in the mix results in slumping of the green block and a smeared appearance of the finished product.

Conversely, if too dry a mix is used, as is frequently the case with regular cement, cracks may appear in face shells and webs of the block. Such green block may also be fragile and the least bumping or careless handling between machine and racks further aggravates cracking or causes the block to "fall" completely. The mix with regular cement, therefore, must be just right for the type of machine used and not much leeway exists in the consistency of the mix.

Air-entraining portland cement, as previously stated, has the unique property of permitting more water to be used in mixes suitable for concrete block manufacture although such mixes can still be classified as dry or semi-dry mixes. These mixes are considerably wetter than those containing regular portland cement and they feed better through all types of block machines.

### Greater Compaction and Less Breakage

Air-entraining cement has another interesting characteristic of permitting a more thorough compaction of the mixture regardless of method

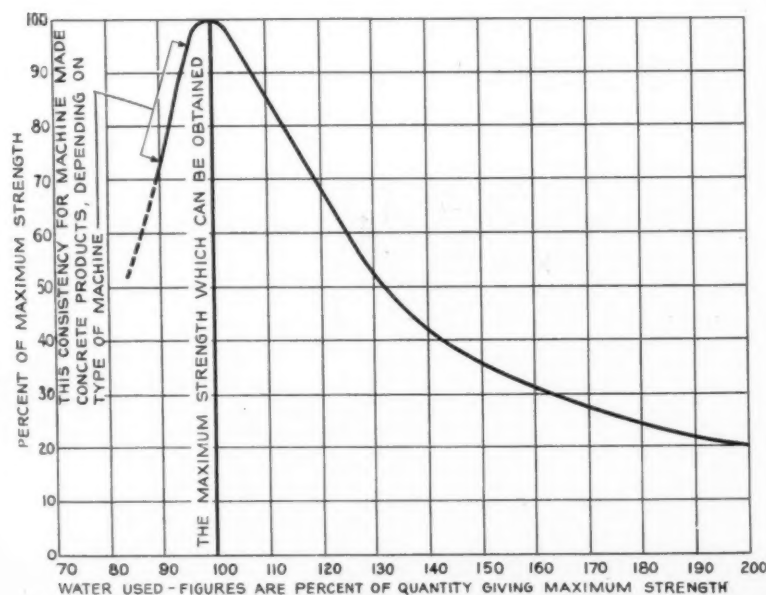


Fig. 1: Effect of quantity of mixing water on the compressive strength of concrete

\*Technical Service Director, Universal Atlas Cement Co.





Fig. 2: Group of houses built with concrete block made with air-entraining cement

used, and this results in a denser block. This performance of the wetter mixture and the mix generally used with regular portland cement might be compared to the fact that wet snow packs tighter than dry snow.

Block mixes containing air-entraining cement hold together better. The block strip with a distinct water web and will withstand rougher handling. Face shells and webs have less tendency to crack. The consistency of the concrete in the green block just after passing through the machine could be classed as "rubbery." When grasped between the fingers the web or face shell can be moved back and forth appreciably without cracking. Such a block withstands handling from machine to racks and kilns and to the curing yard with less cracking or breakage, and therefore less culls and throw-backs, which is most important to the concrete products manufacturer.

## Improvement in Appearance

It has been observed and has been reported by others that regardless of the type of machine, whether vibrator, mechanical tamper or hand tamper, and regardless of the type of aggregate used, whether lightweight, cinders, blast-furnace slag, granite, limestone, gravel or sand, the resulting block made with air-entraining cement show an improvement in appearance and face texture. They have a richer and more clean-cut appearance. There is an absence of edge tear, and the block strip with exact edges and corners. Face texture is improved and more easily controlled by increasing or decreasing the amount of coarse aggregate. Improvement in appearance is greatest where harsh aggregates deficient in fines are used.

Reference is made to Fig. 1. To the left of the vertical line designated "the maximum strength which can be obtained" is shown the range of consistencies used in machine-made concrete products (including concrete block) when regular portland cement

is used. Because air-entraining cement permits the use of more mixing water than regular portland cement in these products the strength of the resulting block more nearly approaches the maximum.

Most plants which have changed to air-entraining cement report increased strengths for these blocks. The increases have ranged from a few percent to over 100 percent in an exceptional case at ages of 3, 7 and 28 days.

## Lower Absorption

Where low absorption is required, the superiority of air-entraining cement has been demonstrated both in the laboratory and field. A field test, rapidly acquiring the name of the "milk-bottle test," has been made on block manufactured with regular cement and block made of air-entraining cement by means of inverting a milk bottle full of water on the face of the shells. In the case of the products of one plant water passed through the face shell of a block made with regular cement in a few minutes, but the same test applied at the same time to a block of the

same age made with air-entraining cement and the same aggregates showed no water coming through even after 24 hours. These results have been duplicated in other plants.

## Summary of Advantages

Some of the advantages of air-entraining cement, when properly used, over regular portland cement, as shown by the experience of concrete-block manufacturers, may be summarized as follows:

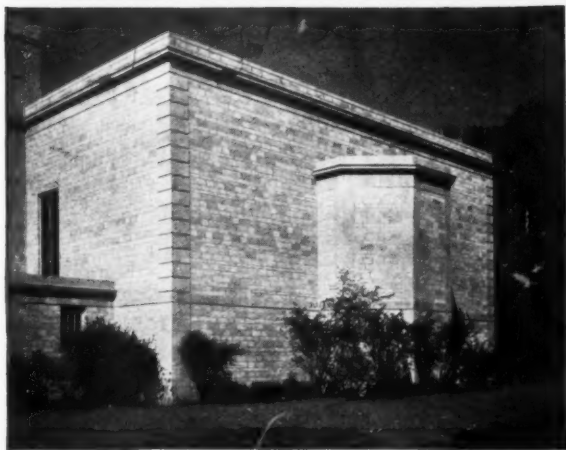
1. No additional expenses or unusual changes in manufacturing procedure have been found necessary by manufacturers who have changed from regular portland cement to air-entraining portland cement.
2. Breakage of block throughout the various stages of manufacture is very much reduced particularly where block are made with aggregates deficient in fine material or where harsh aggregates are used. The effect of this on rate of production and on costs is apparent.
3. Block are usually improved in appearance regardless of aggregates or block machine used. Richer looking block are obtained with sharper corners and edges and truer dimensions.
4. The greatest improvement in quality and appearance generally occurs with harsh aggregates where increased plasticity of this cement is advantageous in securing greater compaction of block.
5. Compressive strengths are generally increased. The amount of mixing water can be increased when using air-entraining cement to produce block of a strength more nearly approaching the maximum possible for the mixture and machine used.
6. Block have lower absorption and exhibit greater resistance to the passage of water. This has been established in the laboratory, and in the field by the "milk-bottle test" previously described.

(Continued on page 217)

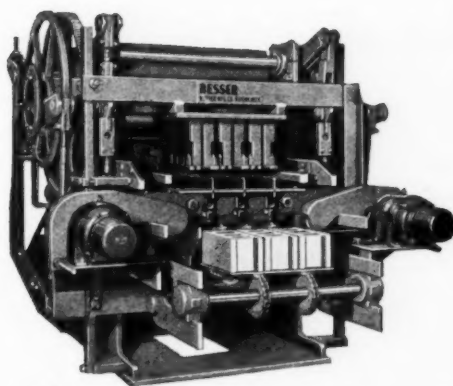


Fig. 3: Concrete block made with air-entraining cement were used for the exterior walls on this large public building

# Concrete Masonry Units Used in Government Buildings

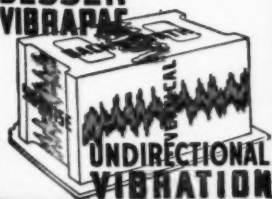


The U. S. Merchant Marine Academy at Great Neck, Long Island, N. Y., is one of many important government construction projects in which concrete masonry was used for outside walls and partitions. All concrete masonry units used in these structures were made on Besser Vibrapacs by National Brick Company, Long Island City, N. Y. Alfred Hopkins & Associates, New York City were the Architects.



Besser Super Automatic Plain Pallet Vibrator. Capacity 600 8" x 8" x 16" per hour made 3 at a time on one plain pallet. Smaller units made in larger multiples on the same pallets.

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Licensed under the Goldman basic vibration patents.

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The Vibrapac combines vibration with exclusive patented Besser Plain Pallet principle.

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A BESSER VIBRAPAC PLAIN PALLET STRIPPER

# Concrete Pipe

## Large Reinforced Concrete Units

**Manufacturing and installation methods involved in the handling of large precast concrete units**

**By M. W. LOVING\***

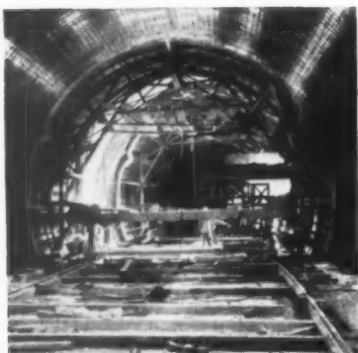


Fig. 1: Steel reinforcement and inner steel form for units of the Alameda Estuary Tube, Oakland, Calif.

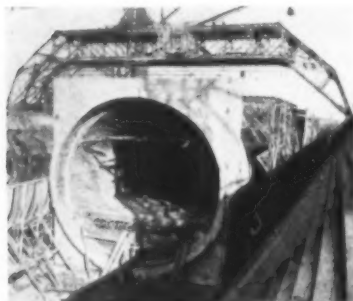


Fig. 2: Constructing the 5,000-ton reinforced concrete units in dry dock



Fig. 3: Ends of estuary tubes were partially bulkheaded, and the units floated



Fig. 4: Tubes were towed seven miles and sunk to a depth of 90 ft. in San Francisco Bay

MUCH PROGRESS has been made in recent years in the manufacture and installation of large, expensive, reinforced concrete units, principally in the United States and Canada. Some of the manufacturers and contractors who made and installed these structures are now engaged in the manufacture of steel ships, reinforced concrete barges, dry docks, etc. This is because their experience and equipment were such that they were in line to engage in war work on a large scale. Many of the innovations developed in peace time were used by the engineers of the Army and Navy for the design, construction and installation of reinforced concrete structures employed in the invasion of Normandy and other places throughout the world.

Many engineers and contractors are not familiar today with what has been done in the past or in other sections of the country; while many of the outstanding engineering projects,

where precast concrete structures are employed, are briefly referred to in articles in the technical press, the details as to how the units were manufactured and installed and the equipment used is not always covered in sufficient detail.

For example, the late J. B. Gordon, Director of Sanitary Engineering, Washington, D. C., telephoned me in Chicago in 1935, to ask if it was feasible to utilize reinforced concrete pipe only 7.5 ft. (90 in.) in diameter to build a subaqueous sewer from the sewage treatment plant to the deep water channel in the Potomac River. I told him that such construction was a small job compared with what had been done; especially the Oakland-Alameda Estuary Tube constructed in San Francisco Bay in 1935-38. (See Figs. 1-4.) A 2436-ft. section of the tube, with a maximum depth of 90 ft. below mean tide, was constructed with twelve reinforced concrete "pipe" each 32 ft. internal diameter, 203 ft. long, shell thickness 2½ ft. and weighing 5000 tons. These units were manufactured in a dry dock, the ends bulkheaded, floated and towed seven miles to the site and lowered to exact position. Joints were made by divers. While this is not a sewer, it serves to indicate that there is no practical limit as to size and weight of precast pipe that may be employed for subaqueous construction.

Needless to add, the Washington, D. C., subaqueous sewer was built in 1936 and two 900-ft. lines of 90-in. reinforced concrete pipe, each 10 ft. in length, were required for this improvement. Both pipe lines were placed on pile supports and tied in place by 1 in. steel tie rods on about 10-ft. centers.

### Lining Steel Pipe with Concrete

In November, 1944, I interviewed the engineers of a large eastern city and their consulting engineers, at their request, on the proposition of lining steel pipe with concrete, placed by the centrifugal process.

\*Consulting engineer.



## CONCRETE PIPE



Fig. 5: At Vancouver, B. C., these concrete lined steel pipe were internally braced and lowered 396 ft. into a shaft then tipped to the horizontal position onto a cantilever carriage

The proposed pipe line, for which they were then preparing plans and specifications, required diameters ranging only from 36 to 60 in. While they knew of and had used concrete lined steel and wrought iron pipe of small diameters for more than 40 years, and were familiar with all of the technical advantages of concrete linings—to prevent oxidation (rusting) of the metal by the active waters (pH of 6.5) to be conveyed; they were concerned about the possibility of the concrete lining chipping or flaking off when the long lengths of steel pipe were handled, transported and placed in the trench.

They were told and shown pictures

of the pressure tunnel under the first narrows in Vancouver, B. C., built at a depth of 396 ft. in 1933-34. This tunnel is 3108 ft. in length and was lined with 90 in. reinforced concrete pipe. The pipe were designed to sustain an internal hydrostatic pressure of 220 p.s.i. A steel lining for the tunnel was recommended by the late J. Waldo Smith, consulting engineer of the Board of Water Supply of New York. Number 8 gauge steel plates were first rolled into true semi-circles and welded and then lined centrifugally with 2 in. of concrete. The steel cylinders were reinforced with  $\frac{3}{8}$ -in. spiral steel rods in two or three tiers, separated by ( $\frac{3}{8}$ -in.) longitudinal steel members.

At each end of the pipe the steel cylinders were not lined for 2 in. so as to permit welding of the joints in place.

The pipe, after being carefully braced internally, and while in a vertical position, were lowered into the shaft and tipped to the horizontal position onto a cantilever carriage (Fig. 5). This carriage was adjustable, both vertically and horizontally so as to prevent the pipe from snagging on rock or timber projections in transporting it to position. The centering jack, shown in Fig. 6, was used to place the pipe on exact line and grade and Fig. 7, shows the remarkable results obtained. The external surface of the pipe was not covered with concrete; the backfilling with concrete between the outer surface of the pipe and the timber shoring or rock was considered adequate protection for the steel.

(Continued on page 217)

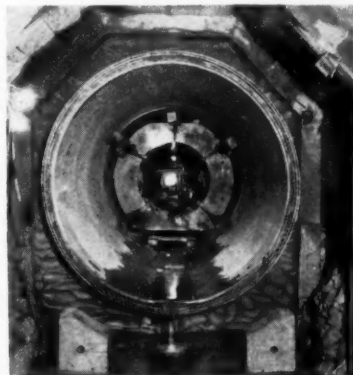


Fig. 6: The centering jack is shown in this picture and the foundation concrete backfill was carefully placed, as shown

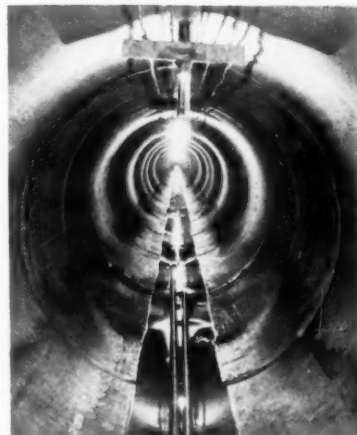


Fig. 7: Precise workmanship under these extraordinary conditions is illustrated in this interior view of the finished 90-in. line



Fig. 8: This special pipe handler was designed by the pipe manufacturer of Los Angeles and it was also used in placing concrete in the pipe forms. The Ford V-8 engine shown at the right provided the power to operate the machine in handling the 43-ton pipe

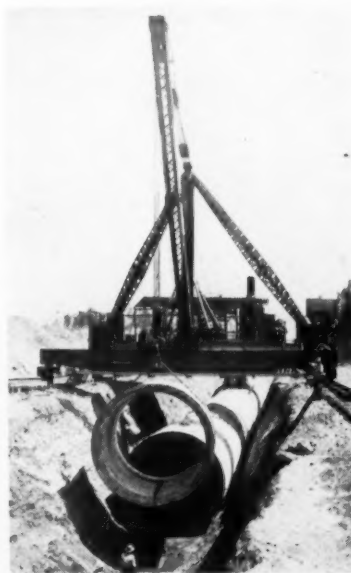


Fig. 9: Gantry crane used to remove the pipe from the trailer trucks to final position in the trench. The pipes weighed 43 tons

# Curing

## Selling Smooth-Faced Units Through Dealers

**Cedar Rapids Block Co., Cedar Rapids, Iowa, uses a combination of live steam and dry heat for curing**

By H. E. SWANSON

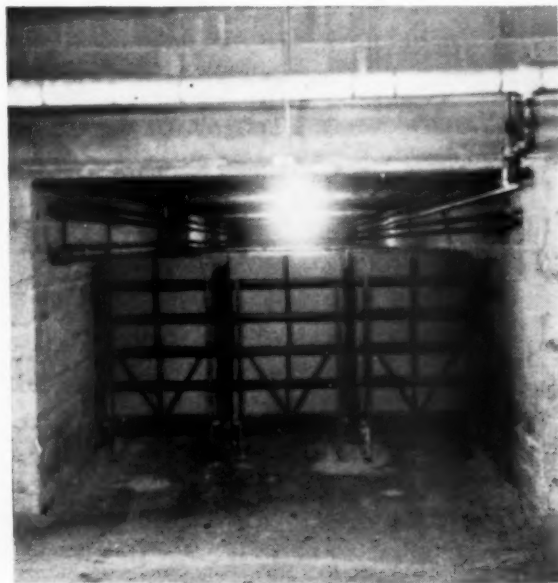
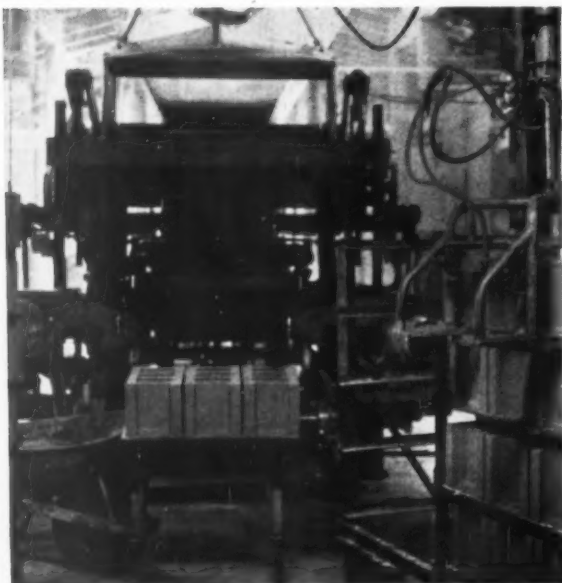
**B**Y USING finely graded aggregates, the Cedar Rapids Block Co., Cedar Rapids, Iowa, is manufacturing a smooth faced unit to meet the demand for this type of block by local material handling dealers. Using a Besser Vibrapac, installed in 1943, this company is producing 600 standard 8- x 8- x 16-in. block per hour, 90 percent of which is sold locally. The present demand for lightweight block and sand and gravel block is about equal, therefore 50 percent of the production is Waylite units. Although lintels and joists are also made on demand the market for standard block is such that the greater part of production is concentrated in this item.

Under loading hopper is car which is pushed over track to mixer

Aggregate for concrete units is purchased locally and is brought to the plant by truck where it is stockpiled. Waylite is received in railroad cars and is transferred from the cars to a stockpile by means of a 20-in. belt conveyor, 22-ft. centers, which transfers it to a bucket elevator, 30-ft. centers, that elevates it to the stockpile. Aggregate is loaded into a 60-cu. ft. hopper by a Baldwin Iron Works end loader, mounted on a Ford tractor, having a 14-cu. ft. hydraulic shovel. It is drawn off

from the hopper into a measuring cart which runs on tracks. A distance of 10 ft. separates the hopper from the underground mixer and a slight pitch in the grade to the mixer allows the cart, equipped with roller bearings, to be moved to the mixer with a minimum of effort. The cart has a bottom dump which discharges aggregates through a grizzley to the 30-cu. ft. mixer. Cement and water are added at the mixer and allowed to mix for a period of six minutes.

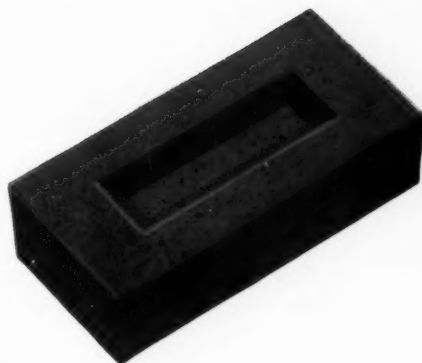
(Continued on page 218)



Left: High production, vibrating type block machine with off-bearer to the right. Right: Entrance to steam curing room

# PERFECT BRICK

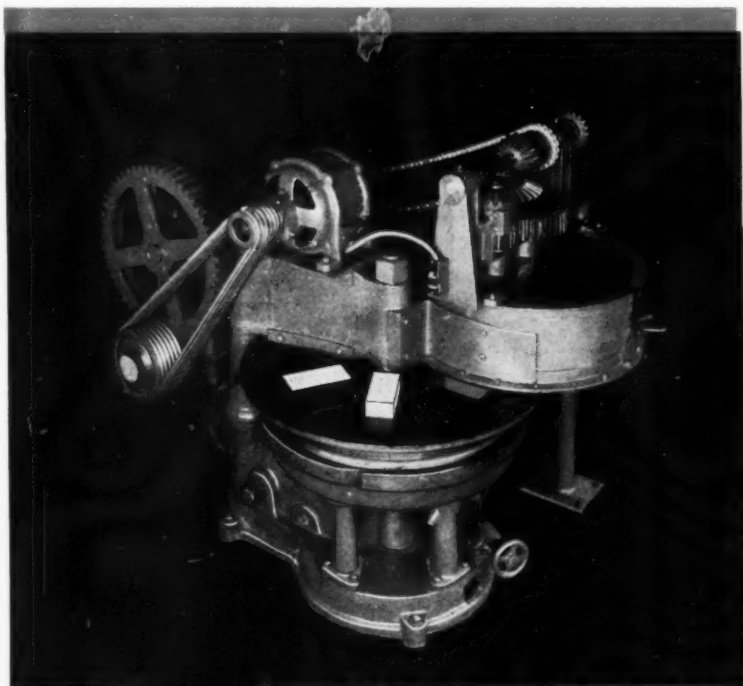
Brick will be among the foremost demand items in the large post-war building markets. And the perfect brick—brick made on J & C Machines—will give you commanding dominance of the market.



## J & C BRICK MACHINE

*The High Speed  
Producer of  
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- 28,000 Perfect Brick in One 8-Hour Shift
- No Pallets Needed
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**T**HE manufacturer who will dominate the heavy post-war market for building products is preparing now to manufacture a "quality product" on a mass production basis. J & C Brick Machines will give such commanding dominance.

Not only do they produce up to 28,000 perfect bricks per day, they do the job without pallets. They produce even textured, sharp-cornered and perfectly uniform brick. The elimination of pallets saves in handling, maintaining and storing thousands of pallets; eliminates the expensive tier type platforms for a cheaper flat deck platform; and lowers the first cost considerably.

In short, J & C Machines are the surest bet for a successful business. Write today for complete information.

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### REDUCE CURING PERIODS

J & C High Pressure Steam Kilns reduce curing periods for concrete products from days to hours. They make a finished product that consistently has the high qualities demanded by most exacting architects and construction engineers.





# Stockpiling

## Small Plant Builds Up Large Reserves for Future

**Des Moines Concrete Products Co. anticipated labor and equipment shortages by manufacturing units in advance of needs**

By H. E. SWANSON

**D**URING the seven years of its existence, the Des Moines Concrete Products Co., Des Moines, Iowa, made an effort to produce as large a quantity of units as possible, to be ready for the time when shortage of labor, machinery breakdowns, war conditions, etc., would necessarily curtail production. As a result of this foresightedness, a stockpile of over 300,000 units of different types of con-

crete products is now available, which is a relatively large amount for a plant of this size. This stockpile insures the customers a properly cured product.

Although only a single machine with a capacity of 200 standard block per hour is used, constant operation during all seasons has made it possible to build this reserve.

Sand and gravel for the produc-

tion of masonry units is trucked in from a nearby sand and gravel plant. The aggregate is dumped into a pit which feeds a chain driven bucket elevator, 22-ft. centers. The elevator discharges to either of two 10-cu. yd. bins from which the aggregate may be chuted to a 12-cu. ft. mixer. Cement and water are introduced by volume and allowed to mix for a five-minute period. A  $\frac{3}{4}$ -cu. yd. skip hoist elevates the mix to the 16-cu. ft. feed box of a Stearns Clipper Stripper, which will make one standard 8- x 8- x 16-in. block or equivalent per operation. Block are removed and placed on racks by a manually operated offbearer. Each rack has a capacity for 66 standard block.

During the summer, curing is done in the outside storage yard, but for curing in cold weather, the racks are moved into a 24- x 100-ft. curing room which is equipped with ten 2-in. steam coil pipes on each side of the shed. A temperature of from 70 to 90 deg. F. is maintained for a 24-hour period.

This company specializes in producing a smooth faced block, accomplished by using fine grade aggregates, and it is merchandised with its appearance emphasized.

The main market for masonry units is in the city, with about 25 percent going to farmers. Standard concrete block makes up the largest percentage of this plant's production, although concrete brick, lintels, and splash block for eave troughs are also made. For customers desiring lightweight units, Celocrete block and brick are produced.

A survey of the stockpile shows that about one-third of the units on hand are standard concrete block, with concrete brick and Celocrete lightweight block making up the majority of the balance.

Nate G. Hannaford, owner of the Des Moines Concrete Products Co., finds that one of his best advertising mediums is the company's office, which is constructed of Celocrete block made at the plant.

### Block Plant Improvements

CONCRETE PRODUCTS CO., Tucson, Ariz., headed by Dr. Wilkerson, is planning a number of post-war improvements. Two new block machines will be purchased, and he also plans to set up a small sand and gravel plant.

### Add Block Machine

THE DELVAN BLOCK CO., South Williamsport, Penn., recently installed a new No. 7 Stearns Joltcrete block machine. This company reports that more than 60 percent of the production in 1944 has been sold to farmers. Robert S. Tilburg is manager.



Above: Office of Des Moines Concrete Products Co. Below: Part of large stockpile of concrete masonry units built up in anticipation of labor and material shortages

## Air-Entraining Cement

(Continued from page 219)

7. Concrete-block mixes containing air-entraining cement can be handled satisfactorily and efficiently by any of the commercial block machines.

### Application to Other Products

While these comments are made on concrete block, results equally satisfactory have been reported or observed on the use of air-entraining cement in the manufacture of machine-made concrete pipe, concrete drain tile and silo staves of the tamped type.

Air-entraining portland cement is no cure-all and will not compensate for poorly made concrete products. However, there is sufficient evidence, in our opinion, of its advantages over regular portland cement to warrant its increasing use which constitutes another forward step in the concrete products industry.

### Concrete Pipe

(Continued from page 213)

In 1922 I witnessed the manufacture and installation of 9-ft. (108 in.) reinforced concrete pipe sewers at Hammond, Ind., and at Calumet City, Ill., in 1928. In 1929, I examined both of these sewers as part of a condition survey for and at the request of a committee of the American Society for Testing Materials, of which I was a member. Prior to that a small percentage of the engineers on the committee considered it feasible or possible to manufacture and install reinforced concrete pipe in diameters greater than 48 in.

Near Los Angeles, in 1936, reinforced concrete pipe were manufactured, transported and installed for the Metropolitan Water District of Southern California. The pipe ranged in diameter from 11 ft. 2 in. (134 in.) to 12 ft. 8 in. (152 in.) and were 12 ft. in length. The shell thickness of the pipe ranged from 11 to 13 in., and the largest units weighed about 43 tons and cost about \$500 each, in place. Because these pipe were used to construct pressure lines operating under heads from 40 to 250 ft., they were heavily reinforced with steel, including steel cylinders for pipe lines operating under the high heads. They were made by precision methods—each pipe was a work of art. Joints were made to close tolerances so there would be no leakage in service.

Steel reinforcement  $\frac{3}{4}$ -in. in diameter was, in some cases, delivered in coils of very long lengths and the reinforcement assemblies were spirally wound on large mandrels, and extreme accuracy in placement of steel reinforcement was the end result. So far as I was able to learn, only one pipe was rejected by the

engineers, and only because it slipped out of the handling sling and fell into the trench. The only injury sustained were some small cracks in the shell and a chipped end.

One manufacturer has produced reinforced concrete culvert pipe in diameters up to 12 ft. and in lengths of 5 ft. These units are installed as large culverts to replace existing wooden or dilapidated steel bridges. When large precast reinforced concrete units are thus installed, it is absolutely necessary for the manufacturer to supervise transportation and installation. In fact, this was done in practically every case where

the large units previously mentioned were installed, including work at Vancouver, B. C., Los Angeles, Calif., and elsewhere.

Because precast reinforced concrete structural units are made with concrete of excellent quality, and are properly cured and aged before they are placed into service, it is quite likely that they will be extensively specified in the post-war period.

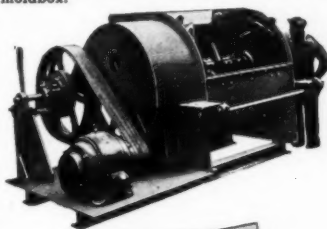
### Building Pipe Plant

GIBSON CONCRETE PIPE CO., Delano, Calif., has under way a complete modernization program. This work



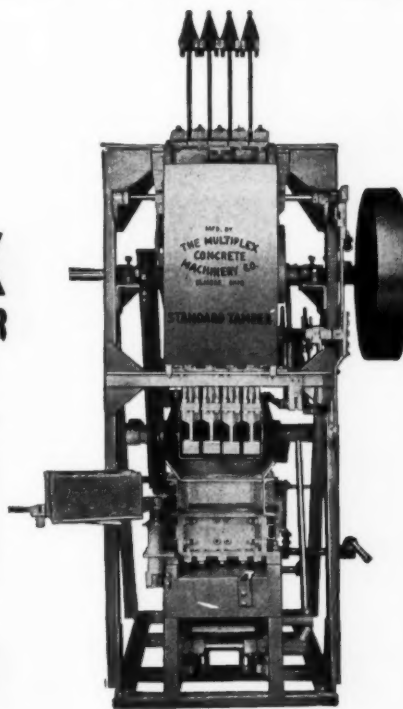
## MULTIPLEX STANDARD TAMPER

• Your reputation as a concrete block manufacturer is wrapped up in every block you turn out. And the best guarantee to building a lasting reputation is the assurance that your own facilities will turn out block of a uniformly high quality. The Multiplex 8-bar Standard Tamper has already helped many manufacturers build a strong reputation. It produces from three to four 8 x 8 x 16 in. units a minute. It can be used for making both plain and stripper, or face blocks, on one base. Time feeding while tamping and hopper agitation account for better units. The strike-off hopper assures a smooth top. The Multiplex Standard Tamper has a rugged, all-steel welded frame and reinforced moldbox.



THE MULTIPLEX COMBINATION

- Beauty In Block
- Low Cost Production
- Simple Operation



### A BETTER MIX AT LOWER COST

Multiplex Multi-Mixer with reverse screw-type action insures fast and thorough mixing of every batch. This is the machine for an "assembly line" uniform product at all times.

Write today for booklet describing our complete line of equipment and vibrating machines.

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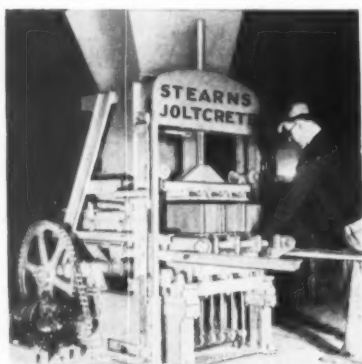
involves the construction of a garage and shop to be followed by curing sheds and a new plant building. The new yard will be 200 x 600 ft., doubling capacity, and two concrete pipe machines will be installed in the new plant.

## Curing

(Continued from page 214)

A manually controlled gate permits the mix to be introduced to a 1½-cu. yd. skip hoist at the expiration of the mixing period. The hoist elevates the mix to the hopper feeding the Besser Vibrapac.

The finished product is trans-



## "ANCHOR" Complete EQUIPMENT AND ENGINEERING SERVICE

Equipment for all phases of manufacturing concrete cinder block and other lightweight aggregate units. Our engineering service for new plants and modernizing old ones will help you operate more economically.

Hobbs block machines, Anchor tampers, Anchor Jr. strippers, Stearns power strippers, Stearns Joltcrete, Stearns mixers, pallets, Straublox Oscillating attachments, etc.  
Repair parts for Anchor, Ideal, Universal, Stearns, Blystone mixers and others.

**Anchor Concrete Mch. Co.**

1191 Fairview Ave., Columbus 8, Ohio

ferred from the machine to racks by a power off-bearer, each rack having a capacity of 60 standard block. An Erickson power lift truck moves the loaded racks to the curing rooms, each of the three rooms having a capacity of 39 racks, or 2340 standard block. The rooms are 10 ft. wide, 6½ ft. high and 75 ft. long and are open at the plant end only. The back ends of the rooms are equipped with a flue or stack that is kept closed during the curing period and is opened when the rooms are open for discharge. This arrangement allows the live steam to escape through the stack instead of entering the plant proper. This company finds that by having curing rooms with a single end opening into the plant, the rooms are much easier to heat, draft is minimized, and greater working efficiency is attained during cold weather since cold air does not infiltrate into the plant thus making it possible to operate the year around under more pleasant conditions.

The curing method employed is a combination of live steam and dry heat. The dry heat is introduced through a series of 1¼-in. pipe coils while open steam jets are used for the live steam, which keeps a constant fog in the rooms during the curing period. A temperature of 160 to 180 deg. F. is maintained throughout the 15-hour curing period. After room curing, the Erickson lift truck transports the racks to the storage yard for further curing.

Harold Spaight, owner of the Cedar Rapids Block Co., who has been in the masonry unit business for the past 15 years, finds that the smooth faced block he is producing is meeting with favor with the local dealers.

## Plan Block Plant

BOLENDER BRICK AND MATERIAL CO., Oklahoma City, Okla., are completing plans for the construction of a block plant which will have a capacity of 2000 block per day. Acreage large enough to allow for future expansion has been purchased upon which a 40-x 40-ft. building will be erected to house the equipment and two steam

curing rooms. Underground storage bins will be used, having belt conveyor to transfer aggregates to a two-compartment hopper equipped with a weigh batcher.

All sizes of concrete and lightweight block and brick will be produced as well as lintels, joists, and special products. Present plans indicate that this plant will be in production by March, 1945.

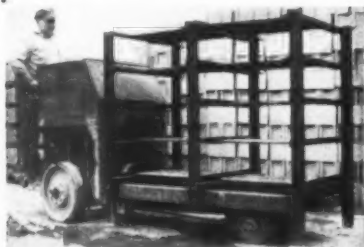
Earl Bolender and Vernon Mock are senior and junior partners, respectively, in the Bolender Brick and Material Co. which has been a distributor of clay products and building material for the past 25 years. Mr. Mock will have charge of the new block plant.

## Safety Trophies of Cast Stone

NATIONAL SAND AND GRAVEL ASSOCIATION will present safety trophies this year at the annual convention in New York. The winners this year are the Dravo Corporation's Pittsburgh River plant, Pittsburgh, Penn., and the Dixie Sand and Gravel Corporation's plant at Chattanooga, Tenn. There were 64 contestants in the 1943 contest conducted by the Bureau of Mines and the National Sand and Gravel Association. Eighteen companies operated throughout the year without a disabling injury, and were awarded Certificates of Merit.

Rock Products provided the trophies which this year were cast stone concrete. These beautiful trophies were made from a slab of concrete cast by Architectural Visto, Chicago, Ill., headed by Harry Gustafson. This company prepared a very highly polished slab, resembling Melrose pink granite, from which the trophies were made by the Theodore Johnson Co., Chicago Heights, Ill. The design is cut in the cast stone by a sand blasting process known as the Lithochrome process, in which mineral colors are impregnated in the design. Three colors are employed. This method makes possible life-like detail in practically ever-lasting color.

## YOU SPECIFY-WE FURNISH Better Johnston Steel Racks and Pallets



• • • are built on order to suit your needs. They are the most economical and efficient that can be made for your plant requirements. Johnston racks and pallets are already giving complete satisfaction in numerous plants. Let us handle your requirements.

**JOHNSTON  
IRON WORKS**

1133 Cornelia Ave.  
Chicago 13, Illinois



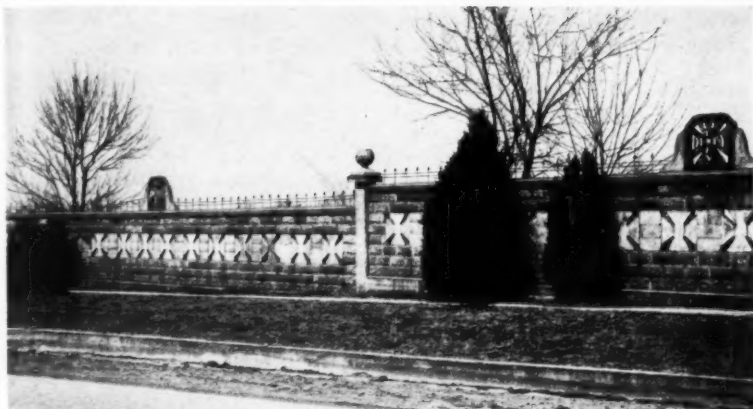
### PERFORATED METAL SAND AND GRAVEL SCREENS

Manufactured exactly to your specifications  
Any size or style screen, in thickness of steel wanted with any size perforation desired.

We can promptly duplicate your present screens at lowest prices

**CHICAGO PERFORATING CO.**  
2437 West 24th Place  
CHICAGO, ILLINOIS  
Canal 1459





Artistically designed concrete block wall around cement plant

### Make Lightweight Units

ANCHOR CONCRETE PRODUCTS, INC., Buffalo, N. Y., was recently granted a franchise to manufacture Celocrete concrete masonry units. A full page advertisement was carried in the Empire State Architect, official publication of the New York State Association of Architects, announcing the arrangement.

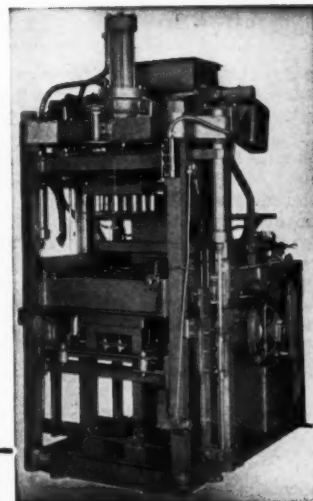
### Concrete Block Wall

WALLS of concrete block have been erected around power houses, transformer stations, and ordnance plants to serve as a protection against possible sabotage, but they have not

been looked upon as something artistic.

In the accompanying illustration, however, is shown a section of the wall enclosing the premises of the Dewey Portland Cement Co., Dewey, Okla.

OXYCHLORIDE CEMENT ASSOCIATION, 1010 Vermont avenue, N. W., Washington 5, D. C., has been organized as a non-profit service organization to standardize performance tests and application specifications for the benefit of users. Members are Dow Chemical Co., F. E. Schundler & Co., and Westvaco Chlorine Products Corporation.



### The Hydraulic Power BLOCK MAKER

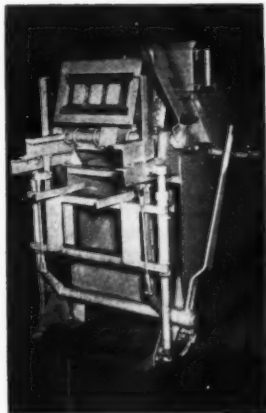
Hydraulic power makes the Kent-Root Vibra-Press a more efficient, longer lasting machine. Its smoothness of action insures long life and low maintenance costs while producing perfect block. Vibration within full floating mold box and full floating cores.

**The KENT MACHINE CO.**

Cuyahoga Falls, Ohio

## The Kirkham Vibrator CONCRETE BLOCK MACHINE

- Sturdy Construction.
- Moderate in Price.
- Low Upkeep.
- Simplicity of Operation.



Various size molds quickly interchangeable.

Liner plates in molds replaceable when worn.

Complete vibration insuring dense, durable blocks.

Plain wood or steel pallets adaptable to all boxes.

**Concrete Transport Mixer Co.**

660 Rosedale Avenue  
St. Louis 12, Missouri

## THE BACKBONE

OF  
CONCRETE  
BLOCK  
PRODUCTION

COMMERCIAL  
CLOSE CLEARANCE  
PRESTEEL PALLETS



For making perfectly-formed, sharp-edged concrete block rely on the accuracy and uniform

dependability of COMMERCIAL Steel Pallets, as are hundreds of manufacturers today.

Light, indestructible and warp-proof, COMMERCIAL Steel Pallets are the backbone of high quality block production. They are die-made to insure uniformity and accuracy. They assure more uniform and quicker curing of the green units. Ribs are pressed into the pallets to impart both strength and mortar grooves into the bottom of the concrete block.

Write Today for a Catalog

**The COMMERCIAL SHEARING & STAMPING COMPANY**  
YOUNGSTOWN, OHIO.

## Ready Mix

(Continued from page 186)

the pycnometer filled with water is determined. Then a known weight of the saturated, surface dry aggregate is placed in the pycnometer, the pycnometer filled with water, and the weight determined. The weight of water displaced by the absolute volume of the aggregate is the difference between the weight of water alone to exactly fill the pycnometer, and the weight of water to fill the pycnometer along with the sample of aggregate. To determine the weight of water displaced the following steps are taken: (1) Subtract the

known weight of aggregate from the weight of the pycnometer filled with aggregate and water. (2) Subtract this weight from the weight of the pycnometer filled with water alone.

Weight of pycnometer full of water.....	2805.8 Gr. (1)
Weight of pyc., gravel, and water to fill pyc.....	3634.0 Gr. (2)
Weight of sample of gravel.....	1340.8 Gr. (3)
Weight of water and pycnometer (2-3).....	2293.2 Gr. (4)
Weight of water displaced by gravel (1-4).....	512.6 Gr.
Specific gravity of gravel sample $1340.8/512.6 = 2.615$	

The answer is the weight of water displaced by the sample of aggregate of the same absolute volume. From these two weights, of aggregate and

of displaced water, the specific gravity can be determined. The following figures from an actual specific gravity determination will illustrate the computations:

Some care is necessary in making this determination, especially with fine aggregate, to insure that no air is carried in with the sample, either as entrained air (between the particles of aggregate) or as adsorbed air (clinging to the surface of the particles). If the sample is poured into the pycnometer when it is approximately half full of water, practically all of the entrained air will be freed as the sample falls through the water. There may, however, in some cases be enough adsorbed air to affect the accuracy of the determination. This can be removed by filling the pycnometer nearly full of water, holding the finger over the opening, and shaking thoroughly by inverting 30 or 40 times. Care must also be taken to remove all of the emulsion that rises to the surface. This is a sort of froth and contains air bubbles. Unless thoroughly removed the results will be inaccurate. A simple way to do this is to force water into the opening with the ear syringe until the outflowing water is completely clear. The pycnometer should then be wiped dry and weighed.

Specific gravity is one of the very few properties of an aggregate, especially fine aggregate, which is practically constant. As long as the sand is from the same source, very little change is to be expected. There is somewhat more variation in coarse aggregate, although that too is not usually very pronounced. However, on account of the extreme importance of knowing the exact specific gravity of all aggregates at all times, check runs should be made at frequent intervals.

Accurate specific gravity of the various ingredients is essential in designing the mix. It is used in determining the proper weight of each ingredient—cement, water, sand and coarse aggregate—to give required strength, yield, placeability, impermeability and resistance to cracking. It is also used in determining the percentage of surface water carried by the aggregates as charged into the mixer, so that proper compensation can be made. It is, in fact, the key to scientific concrete.

The way specific gravity is used in design and control, along with the mathematics of optimum design and the mechanics of precise field control of concrete manufacture, will be discussed in later articles.



ASK THE  
MEN WHO  
USE THEM

PAGE Automatics  
ARE TOPS!

1. The Page AUTOMATIC is the only dragline bucket that ALWAYS lands ready-to-dig... holding this position with all lines slack.

2. Bearing down with all weight on the teeth, Page buckets automatically dig in at first pull of the load line.

3. Getting a full load within one or two bucket lengths, Page Automatics save time... reduce maintenance costs... boost yardage!

**PAGE**  
*Automatic*  
**DRAGLINE BUCKETS**

PAGE ENGINEERING COMPANY, CHICAGO 38, ILL.

## Phosphate Production Problems

(Continued from page 197)

2-in. mesh trommel screen which makes a size separation, and heavy sprays of water clean the lump as it travels along the screen to the discharge point.

The minus 2-in. discharges into a counter-current decantation tank which makes the first hydraulic separation, the overflow going to 16-ft. Allen cones or to a drag classifier, while the coarser underflow is either pumped directly into a secondary rinser or into a secondary double log via a dewatering elevator coming out of the boot of the decantation tank.

The secondary logs receive the plus 2-in. lump from the trommel as well, after being hand-picked, and prepares the two feeds for another rinsing. This secondary rinser is usually smaller since its job is much easier with lump which is relatively free of clay. Its discharge end is fitted with a 1/4-in. mesh or 3/8-in. mesh trommel screen, the oversize of which is clean and discharges to washed storage subsequent to flint picking.

The undersize is pumped, after further dilution, to a small Dorr bowl in which the last vestiges of clay and very fine phosphate are separated, and the reciprocating-rake deck delivers clean coarse sands to washed storage.

The volume of overflow from the decantation tank, as noted above, is usually fed to 6 or 8 cones in parallel, which function to separate only the first clay from the slurry, care being taken not to overflow appreciable amounts of phosphate sands with it. This serves the purpose of making the action of succeeding units in the flowsheet more effective since all of the phosphate is to be worked on without the handicap of a large concentration of colloidal clay.

The cones underflow is sent either to a large Dorr bowl classifier direct or first to a log via dewatering drag, for final conditioning. In either case the bowl is the final separator before the sands are discharged to washed storage. This unit is in a key spot in the recovery of fine sands and is of the latest model, a typical specification being as follows: Dorr Type FX classifier, with 30-ft. bowl and 8-ft. reciprocating-rake deck furnished with critical size control. Combinations of bowl and rake and reciprocating-rake speeds dilution and bowl gate adjustments, allow for the wide variations in feed conditions occurring from time to time. The critical size control keeps the circulating load of a range of particles too heavy to overflow, but too light to travel up the rake deck, from accumulating to an extent large enough to stall the unit. The sands moving up the rake deck are given a final spray wash before discharging to washed storage.

The operation of the washer is never static. Different kinds of muck respond to different treatment. That which produces an average washed product of 72 percent B.P.L. has a proportionately large percentage of plus 1/4-in. lump and smaller percentage of the finer sizes than that which washes to 68 percent B.P.L. On the other hand two different deposits may produce the same grade of washed product but vary widely in percent recovery. There comes to

mind in particular a high grade muck with a characteristic gray color, which invariably produced a low recovery. It was found that much good phosphate sand overflowed the hydroseparator, until the simple expedient of less conditioning and reduced fresh water additions raised the amount recovered without reducing the grade. The secret of its proper treatment lay in its unusual softness and comparatively low clay content.

The following sets of figures are illustrative of separations obtained

(Continued on page 222)

## "HERCULES" (Red-Strand) Wire Rope



"HERCULES" is our trade name for the very best heavy duty wire rope that we are able to produce. Best in quality . . . best in design . . . best in fabrication. So that it can be recognized by sight, it is always made with one Red Strand.

As "heavy-duty" service covers a wide range of working conditions, this wire rope is manufactured in numerous constructions, as illustrated above. Most of these constructions can be furnished in either a hemp center, a wire rope center or a metallic core. Preformed: "HERCULES" Red-Strand Wire Rope is

furnished either Preformed or Non-Preformed. Under any conditions, the Preformed is easier and quicker to install and safer to handle. For most purposes it is decidedly longer lasting.

In "HERCULES" there is a Right rope for every heavy-duty purpose. You will make no mistake if you let the Red-Strand be your Wire Rope Guide. Its use will help you save time . . . reduce operating cost . . . increase safety. Ability to make proper selection comes with experience. We shall be glad to have you consult us on any wire rope problem you may have.

MADE ONLY BY

### A. LESCHEN & SONS ROPE CO.

WIRE ROPE MAKERS ESTABLISHED 1897

3909 KENNERLY AVENUE ST. LOUIS, MISSOURI, U.S.A.

NEW YORK • 90 West Street  
CHICAGO • 810 W. Washington Blvd.  
DENVER • 1534 Water Street

SAN FRANCISCO • 520 Fourth Street  
PORTLAND • 914 N. W. 14th Avenue  
SEATTLE • 2410 First Avenue South



## Phosphate Problems

(Continued from page 221)

in a washer designed to recover 40 tons of washed, dried sands and lump, per hour:

High Grade		
	Tons Per Hour	Percent B.P.L.
+¼ and over....	18	72.0
—¼ +30 .....	10	70.5
—30 to approx. 200	13	73.0
Total 41 tons per hour		
Recovery: 60 percent		

## Low Grade

	Tons Per Hour	Percent B.P.L.
+¼ and over....	8	67.0
—¼ +30 .....	10	66.5
—30 to approx. 200	16	70.5

Total 34 tons per hour  
Recovery: 48 percent

## Recovery of Fines

Up to 10 or 12 years ago much valuable finer phosphate sand found its way to the settling pond, as witnessed by the fact that old dried-up ponds are now being recovered with drag-

line and bulldozer and even hydraulically, yielding thousands of tons of sands grading as high as 65 percent B.P.L. As mentioned in the introductory paragraphs of this article the market demand fostered the development of capturing the fines and preparing them for use in the electric furnace. Thus today, the difference between operating at a profit or not lies in the efficient recovery of fines.

At first home-made boxes and settling basins were tried, among them the well known Spitzkasten. Some of these were quite effective as catchers, but they all were burdened with the handicap of not being continuous: in other words they would have to be by-passed at intervals and emptied either manually or mechanically.

The Dorr hydroseparator was introduced a number of years ago and immediately became popular until now it is standard in every plant in the field. It recovers phosphate up to 250-mesh continuously, the recovered sands coming out of the central bottom cone as a slurry of about 40 percent solids. The only drawback lies in the fact that this slurry must in turn be dewatered before being discharged to washed storage. Furthermore, in order not to re-circulate too much of this sand back to the hydroseparator, a very large dewatering drag or similar unit must be employed.

The only device which has overcome this handicap is the Bird centrifuge as used at the Columbia plant of the T.V.A. It seems to be doing an excellent job of recovery as well as dewatering. The question is whether the cost of operating such high speed, comparatively expensive machinery is economical in the face of the value of the recovered product.

Overflows from cones, dewatering drags, and rake bowls are all returned to the hydroseparator. These feeds vary widely not only because of their respective sources but also because fluctuation in muck feed, or change in fresh water additions at the head of the washer, reflect themselves almost immediately as variations in the above mentioned units.

The solids content from the weirs of Allen cones is commonly as high as 12 percent, and consists mainly of very fine clay with no great quantity of phosphate sands. At the other extreme, the Dorr bowl operating on the coarse sands, will discharge an overflow of about 2 percent solids, most of which is fine phosphate and silica sand.

For low grade muck with its high clay content all available water is used in order to keep down the overall solids content of hydroseparator feed at a good operating level. A 50-ft. diameter unit will handle from 2500 to 3500 gal. of slurry per minute and with a solids content of 4 percent or less in the overflow, the phosphate losses to ponds are low. In fact,



## IT'S A CINCINNATI CONVEYOR BELT

Conveyor Belts carrying the name Cincinnati have been cited for achievement wherever used for moving aggregate in quantity. At home and serving with the military forces they have added a shining, new chapter to Cincinnati performance.

To those looking to the future, we say, keep your eye on Cincinnati for tonnage . . . for low belt cost per ton . . . for long service.

THE CINCINNATI RUBBER MFG. CO.  
CINCINNATI, OHIO

**CINCINNATI**  
CONVEYOR AND TRANSMISSION BELTS · HOSE

experience has proved that only a few tenths of a ton of phosphate per hour is recoverable beyond the hydroseparator when it operates as above.

In late summer, however, when evaporation losses are high at water reclaiming ponds, and creeks are low, cutting down water available for washing, the attempt is often made to wash just as much muck as at the other seasons of the year. The results immediately show up in the hydroseparator overflow as an increase in solids content. The concentration may be as high as 7 percent solids representing 2 to 3 tons per hour of recoverable phosphate lost to pond, instead of the normal 0.2 to 0.3 tons.

The quantity recovered from the collecting cone varies from 8 to 12 tons per hour and is pumped and dewatered in closed circuit with the hydroseparator feed as already mentioned. The dewatered sands, usually containing at least 37 percent water, will range up to 66 percent B.P.L. when the washer is on high grade muck and as low as 55 percent B.P.L. when the washer is handling low grade, especially a muck high in silica. Apropos of this, it is generally true that the finer the sand the higher the silica content. Thus, in recovering sands from the hydroseparator overflow, the grade rapidly falls to a concentration quite valueless.

#### Operating and Maintenance

Each moving or rotating unit is usually independently motor driven, the electric energy being purchased from the T.V.A. at 44,000 volts and transformed at the plant to 440 and 220 volts. A 40-ton washer will consume about 225 kw. per hour or in round numbers, 300 hp.

The operating crew consists of scraper operator and helper, pump man and helper, and a general mechanic, plus one to two men for picking belt duty and general utility on breakdowns. These are frequent and immediate repair is the watchword, for the washing operation is the heart of the entire phosphate plant. To this end, maintenance supplies and repair crews are always available as part of the operating scheme.

Breakdowns are caused by overloading, and by tramp iron and hard rock escaping notice at the grizzly and hanging up in the logs on elevator. The great abrasiveness of the phosphate sand also necessitates periodic replacements. The expense of shutdown both in operating time lost and wage outlay to skilled or semi-skilled labor has made it worthwhile to design stressed parts with a very liberal factor of safety, and to replace ordinary steel and cast iron in contact with the phosphate, with abrasion resistant alloys. For instance, chutes are lined with high carbon steel plate containing a small

percentage of manganese; log paddles are made of Ni Hard cast iron which outlasts even chilled iron three and four to one; drag chains are alloy, with hardened steel bushings and alloy pins.

The sprawling washer plant is not housed and is therefore severely affected by the occasional hard freezes in winter and frequent electrical storms in summer, both causing many hours of delay. Add to this the delays entailed in normal operation and it is easily understood why washing cost is high, a figure of 65c a ton, exclusive of overhead, not being at all unusual.

#### Concrete Products Market

SOUTHWESTERN BELL TELEPHONE Co., will build 12 Repeater Stations, costing \$100,000. Each building, 25-x 25-ft., will be constructed of concrete block masonry. This is a new industrial building market for concrete block which should be cultivated.

#### Committee Chairman

RALPH MORDEN, traffic manager, Marble Cliff Quarries Co., Columbus, Ohio, has been named chairman of the crushed stone, sand and gravel committees of the Ohio Valley Transportation Advisory Board.

## WANT YOUR MOTO-MIXER TO

• RUN BETTER?

• LAST LONGER?

• OPERATE MORE ECONOMICALLY?

Then send for this  
FREE BOOK

Here's the book that tells you just what and what not to do to get the most from your Rex Moto-Mixer! It tells you how to clean your machine and how often . . . how to take care of the chain drive . . . how to care for the water system, the drum rollers, drum brakes, transmission, engine and other important parts. You'll find information on lubrication, and complete lubrication charts. And you'll find valuable hints on operating that will enable you to get the most from your Moto-Mixer. There's a check list that will simplify your periodic check ups.

Send for your Free copy of "A Guide to the Wartime Care and Maintenance of Rex Moto-Mixers," today! You'll find it written in a free-and-easy manner that will make you really enjoy reading it. Address Chain Belt Company, 1695 West Bruce Street, Milwaukee 4, Wis.



# Financial

## RECENT DIVIDENDS

Alpha Portland Cement Co.	.25	Dec. 21	Lone Star Cement Corp.	.37½	Dec. 22
Arundel Corp. E.	.50	Dec. 27	Lone Star Cement Corp. Yr.		Dec. 22
Arundel Corp. A.	.25	Dec. 27	end	.25	Dec. 22
Basic Refractories, Inc.	.10	Dec. 15	Monolith Portland Cement		
Bessemer Limestone & Cement Co.	.25	Nov. 30	Co. pfd.	.25	Dec. 15
Bessemer Limestone & Cement Co. pfd.	.75	Jan. 1, 1945	Monolith Portland Midwest		
Dolese & Shepard Co.			Co. 8% pfd. (p10) (ar-		
Cap. (p50)	.50	Dec. 5	rears)	.20	Dec. 15
Florida Portland Cem't Co.			Missouri Portland Cement		
7% ptc. pfd (p100) (ar-	3.50	Dec. 20	Co. Com. (p25)	.50	Dec. 15
rears)			National Gypsum Co.	.25	Dec. 20
Ideal Cement Co.	.25	Dec. 22	Pacific Coast Aggregates,		
Industrial Silica Corp. pfd.	\$1.62½	Mar. 10	Inc., Com. (p5)	.18 ext.	Dec. 15
International Minerals & Chem. Corp. pfd.	1.00	Dec. 30	Pennsylvania-Dixie Cement		
International Minerals & Chem. Corp.	.50	Dec. 30	Corp. \$7 pfd. A (np) (ar-	.50	Dec. 15
Kelley Island Lime & Trans-			rears)		
port Co.	.20	Dec. 20	Pennsylvania Glass Sand	.25	Jan. 1, 1945
			Corp.		
			Pennsylvania Glass Sand	1.25	Jan. 1, 1945
			Corp. pfd.		

Signal Mountain Portland Cement 8% pfd. (p100) (arrear)	4.00	Dec. 6
Southern Phosphate Co. Com. (p10)	.15	Dec. 15
Superior Portland Cement, Inc., pt. A	.82½	Dec. 23

SUPERIOR PORTLAND CEMENT, INC., Seattle, Wash., has completed a re-capitalization plan designed to meet conditions arising in the post-war era. Under the new set-up, capital would consist of \$3,586,000 5 percent (3 percent fixed—2 percent cumulative income) debenture bonds, and 123,906 shares of common stock outstanding out of an authorized 124,000 shares of no par value. The present 71,720 shares of class A and 100,000 shares of class B are carried at \$4,622,796. Surplus of \$1,753,256 would be unaffected except as to deductions for expenses incidental to the plan. Holders of class A stock would receive \$50 face value of the new 5 percent debentures and one-third share of the new no par common, plus accrued dividends through December 31, 1944, for each share held. All arrearages were cleared in 1936. Holders of class B common would exchange share-for-share for new no par common stock.

NATIONAL GYPSUM CO., Buffalo, N. Y., has applied to the S.E.C. for authority to issue 24,119 common shares to be given in partial payment for the Kimbalton Lime Co., Shawsville, Va.

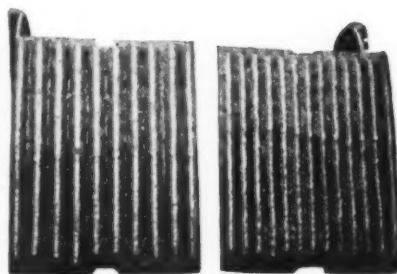
BASIC REFRACTORIES, INC., Cleveland, Ohio, showed earnings of \$183,222 for 1944 on sales of \$5,700,000. While sales have risen to nearly double 1940 volume, reflecting the tremendous expansion in the steel industry, its largest customer, the gross profit margin has been reduced from 23 percent in 1940 when earnings were \$445,890 and sales \$2,900,000 to 7 percent last year.

AMERICAN AGRICULTURAL CHEMICAL Co., New York, N. Y., producers of phosphates and crushed limestone, showed a net profit, after all charges, of \$157,803 for the three months ended September 30, 1944. This compares with \$172,571 for a similar period in 1943.

ARUNDEL CORPORATION, Baltimore, Md., had a net profit, before income taxes, of \$309,295 for the nine months ended September 30, 1944. This compares with a net profit of \$1,393,637 for a like period ended September 30, 1943.

## Crushes 4900 tons!

WHERE FORMERLY  
1800 TONS HAD  
BEEN THE LIMIT!



WHEN your crusher jaws become seriously worn, don't think of throwing them on the scrap pile. Instead, save yourself the trouble of a costly replacement and an annoying shut-down by doing what one company does,—and that is to hard-face worn crusher jaws with wear-resistant Coast Metals. Here 4,900 tons of material are now being crushed, whereas formerly, with uncoated standard manganese jaws, 1,800 tons had been the limit.

Coast Metals Hard-Facing is of particular value wherever it is difficult or impossible to get new parts, or replace those which are worn out

because of the heavier load and longer periods of service to which equipment today may be subjected.

Easily applied by arc or acetylene welding to surfaces, edges, points of new or old equipment of any ferrous metal. Let us tell you how Coast Metals Hard-Facing can meet your particular needs.

COAST METALS, INC.

Plant and General Offices: Canton, Ohio  
Executive Offices: New York, N.Y.

**COAST  
METALS**  
**hard-facing  
weld rods**

YOUR EQUIPMENT'S LIFE PRESERVER AGAINST WEAR



ALBERENE STONE CORPORATION OF VA., New York, N. Y., reports a net deficit of \$31,513 for the nine months ended September 30, 1944, as against a net income of \$7,935 for a like period ended September 30, 1943.

INTERNATIONAL MINERALS & CHEMICAL CORPORATION, Chicago, Ill., reported through President Louis Ware that earnings in the first quarter of the new fiscal year, starting July 1, 1944, were about the same as a year ago. President Ware expressed the belief that earnings for the coming year ending June, 1945, would be about the same as for the previous year. He reported to stockholders that all the phosphate mines were operating at capacity, and that a new mine in Montana is now producing at the rate of 150 tons a day and will be stepped up as demand grows.

CONSOLIDATED CEMENT CORPORATION, Chicago, Ill., showed the following consolidated earnings statement for nine months ended September 30:

	1944	1943
Net sales .....	\$1,592,135	\$1,775,040
Cost of sales .....	1,263,883	1,234,542
Selling expense .....	327,656	317,860
Operating profit .....	596	222,638
Income bond int .....	42,192	49,596
Income note int .....	3,963	5,153
Bond discount and expense .....	5,962	5,816
Loss and assets .....	3,581	2,810
Net profit .....	\$55,102	159,263
Includes expense applicable to non-operating periods, less miscellaneous income.		
*Before federal income taxes.		
*After federal income taxes.		

HOOSAC VALLEY LIME CO., INC., Adams, Mass., has made an offer through First National Bank, Boston, Mass., as agent for bondholders committee to holders of the company's 1st 6s, due June 1, 1947, to purchase bonds of \$1000 denomination with all accrued and unpaid interest for \$300 per bond. This offer is on condition that 90 percent of the bondholders accept the plan.

PENNSYLVANIA-DIXIE CEMENT CORPORATION, New York, N. Y., presented the following statement of consolidated earnings for the year ended September 30:

	1944	1943
Net sales .....	\$5,586,731	\$8,920,793
Cost, expense, etc. ....	5,214,006	6,908,689
Depreciation & depletion .....	493,382	508,444
Operating profit .....	\$120,657	1,503,660
Other income, net .....	89,236	74,328
Total income .....	\$210,893	1,577,988
Interest .....	109,816	180,289
Federal income tax .....	32,500	743,000
Net profit .....	\$108,737	654,699
Additional depreciation charged to special reserve: 1944, \$402,037; 1943, \$431,638.		

YOSEMITE PORTLAND CEMENT CO., San Francisco, Calif., has probably been formally dissolved on December 18, 1944, as more than two-thirds of the outstanding stock have approved liquidation of the company. On De-

cember 26, 1944, an initial liquidating dividend of \$3 per share was scheduled to have been paid to preferred stockholders. This was to be followed by another \$3 dividend on January 10, 1945, until the total of \$7.25 will have been paid.

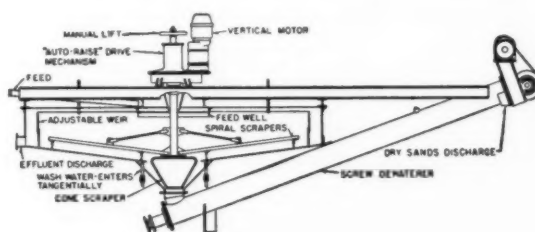
PACIFIC PORTLAND CEMENT CO., San Francisco, Calif., recently lost a property valuation suit brought by minority stockholders of the former Beaver Portland Cement Co. The judgment called for the payment of \$157,821. Pacific Portland obtained a controlling interest in Beaver Portland Cement Co. in 1936, and on

October 28, 1940, bought its assets for \$862,229. Minority stockholders brought suit, alleging that the assets and properties were worth more than \$1,000,000 at the time purchase was made, and asked for the difference.

## Pavement Yardage

AWARDS of concrete pavement for November, 1944, have been announced by the Portland Cement Association as follows:

SQUARE YARDS AWARDED DURING NOVEMBER, 1944	
Roads .....	712,519
Streets and Alleys .....	434,736
Airports .....	1,496,802
Total .....	2,644,057



## FINE SAND RECOVERY

A 15 Foot Diameter Hardinge Hydro Classifier recovered 25 Tons per day of fine sand from 650 G.P.M. of wash water previously sent to settling pond.

## HARDINGE EQUIPMENT

	Bulletin No.
Agitators .....	31-C
Classifiers .....	31-C
Classifiers, Air .....	17-B
Classifiers, Counter-Current .....	38-A
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Mills, Rod .....	25-B
Mills, Tube .....	18-A
Mixers, Slurry .....	31-C
Pumps, Discharge .....	32
"Rugby-Cole" Dryers .....	16-C
Kilns and Coolers .....	16-C
Scrubbers, Conical .....	37
"Thermomill" .....	17-B
Thickeners .....	31-C

The Hydro Classifier has:

- (1) Auto raise mechanism which permits machine being shut down without unloading.
- (2) Adjustable wier for varying volume and overflow.
- (3) Screw dewaterer producing dry sand.

Write for Bulletin 31-C.

# HARDINGE

COMPANY, INCORPORATED, YORK, PENNA.

NEW YORK

CHICAGO

SAN FRANCISCO

TORONTO

CC-3 Rock Products

## Cement Finances

(Continued from pages 198-199)

have; or taking into account the depreciation and depletion write-off, a net increase of 2.8 cents per bbl.

In the case of Alpha, for the year ending September 30, 1944, there was a net deficit of \$132,537. The net current assets were reduced from \$8,744,388 as of December 31, 1943, to \$8,614,302 as of September 30, 1944. The net property valuation was reduced (depreciated) from \$10,755,867 on December 31 to \$10,315,578 on September 30. Hence the net valuation per barrel of annual capacity

(including net current assets) was changed from 17 cents to 14 cents (\$0.86-\$0.72). In other words Alpha was able to absorb its 1944 operating loss and still reduce its plant investment by 3 cents per bbl. of annual capacity.

It would appear then, that probably the industry as a whole about broke even on 1944 business, and that any more years like 1944 will probably dig into assets. At the moment, the industry as a whole, appears in a good position to meet another year of no profits or even deficits; or it is in a good position to engage in prompt rebuilding and rehabilita-

tion, if the war should end before the beginning of another construction season.

## Forms of Capital

The industry as a whole has done a fine job the last ten or twelve years in reducing its bonded debt. Alpha has nothing but common shares in the hands of the public, and has been consistently reducing the number of shares by repurchase and cancellation. Lehigh has a relatively small amount of 4 percent preferred stock outstanding but no bonded debt. Lone Star long since has been cleared of both bonded debt and preferred stock. Pennsylvania-Dixie has gotten rid of a large part of its original bonded debt. Like all other well-managed industries such indebtedness and preferred shares as are outstanding are on a much lower interest and dividend basis than was formerly the case.

The reduction of debt and the conversion of capital structure to preferred and common stocks has been made a handicap to industry by our present corporation income tax laws. Income earned and used or available for dividends is taxed as profit, but interest on indebtedness is an expense, and hence deductible from taxable income. This situation is so serious that at least one cement company proposes to change its capital structure by issuing new 5 percent debenture bonds (3 percent fixed, 2 percent cumulative) in place of present cumulative convertible preferred stock. The reasons for proposing this change are given by the president of the company to his stockholders as follows: "Prospects for small sales volume, increased competition, higher manufacturing costs and lower profits."

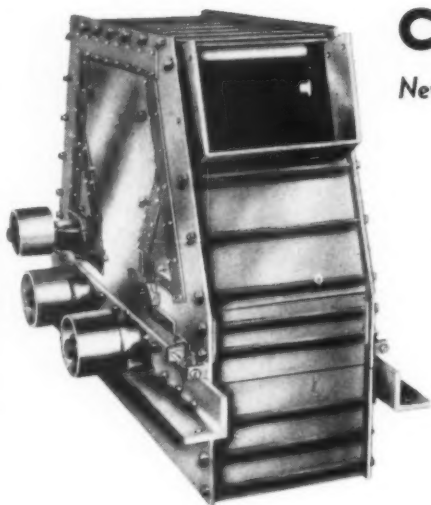
## Preparing Finances for Future

In a statement to stockholders of Superior Portland Cement, Inc., the management points out that while working capital is at a record high the quarry properties are fully adequate, the company owns a hydro-electric plant to supply most of its own power, and while post-war construction obviously will bring large cement demands, the outlook is "both clouded and complex."

"It is conceded," it is stated regarding prospective cement demands for post-war, "that it is highly improbable that they can supply a sufficient demand over the next few years to off-set the loss of volume, war occasioned, and even if this theory proves to be incorrect, the excess capacity in the company's trade area and the likelihood of added competition from other sources creates cause for real concern. Furthermore, future developments and the use of competitive substitutes for cement may have a marked effect upon the company's markets."

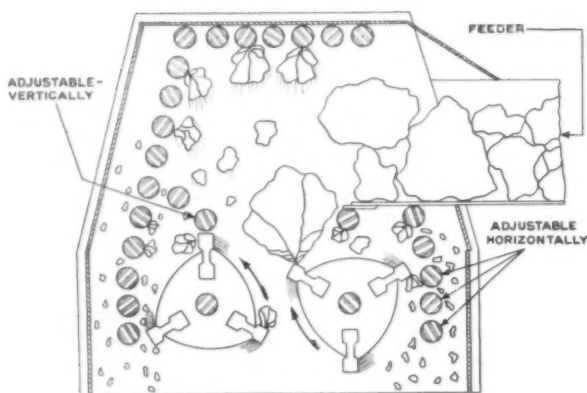
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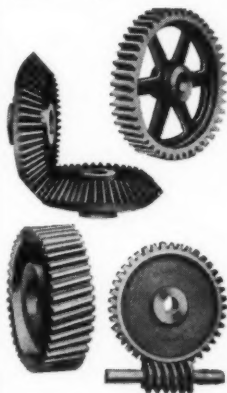
THE NEW HOLLAND LINE: Concrete and General Purpose Mixers • Stone Handling Equipment • Limestone Pulverizers • Elevators • Roll Crushers • Conveyors • Impact Type Hammer Crushers • Jaw Crushers • Revolving Screens • Vibrating Screens • Dewaterers

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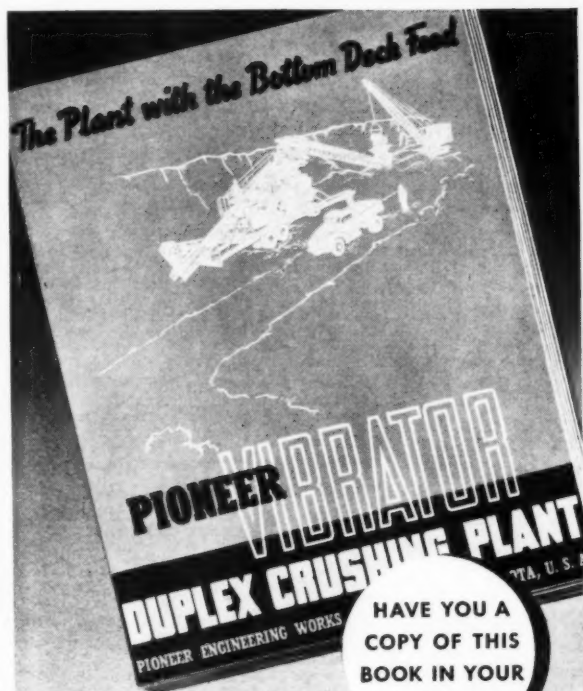
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It isn't possible to spread lime all the time. When fields are wet or crops are growing, your lime spreader trucks can be used for other profitable jobs if they are equipped with Flink Self-Feeding Spreaders. The Flink fits all dump trucks as a replacement end gate . . . truck can still be used for all trucking and hauling jobs, for road work, for sand and cinder spreading.



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Strictly a one man outfit. The driver of the truck operates the spreader from the cab.

Spreads wet or dry materials, thick or thin as desired, up to 1" in size, 15' to 28' wide, depending on type of ground and nature of material.

Fits all standard dump bodies as a replacement end gate. Permits dumping of loads in usual way, or spreader can be removed in 5 minutes.

Write for Complete Literature

**The FLINK COMPANY**

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STREATOR, ILLINOIS



## New Jersey Passes Silicosis Law

**N**EW JERSEY has passed a law covering employee compensation for disability or death resulting from silicosis or asbestosis, which became effective January 1, 1945. As the New Jersey law may serve as the pattern for legislation in other states, the provisions of the law supplementing chapter 15 of Title 34 of the Revised Statutes are given below:

1. Employer and employee may elect to accept or not to accept the provisions of this act. Such election in respect to the provisions of this act may be made in like manner as provided in sections

34:15-7 to 34:15-11 of the Revised Statutes in respect to accidents. When employer and employee have accepted the provisions of this act every such employee who, in the regular course of his employment, suffers total disability or death as the result of silicosis or asbestosis, as hereinafter defined, shall be entitled to workmen's compensation, as hereinafter provided in this act.

2. Definitions: (a) "Silicosis" means a disease of the lungs, due to breathing air containing silicon dioxide ( $\text{SiO}_2$ ) dust, characterized anatomically by generalized fibrotic changes in the lungs, with a development of miliary nodulation, demonstrable by X-ray examination or by autopsy, resulting from any process or

occupation involving the inhalation of silicon dioxide ( $\text{SiO}_2$ ) dust.

(b) "Asbestosis" means a disease of the lungs, due to breathing air containing asbestos dust, characterized, anatomically by generalized fibrotic changes in the lungs, demonstrable by X-ray examination or by autopsy, resulting from any process or occupation involving the inhalation of asbestos dust.

(c) The word "disability" means the state of an employee's being actually incapacitated, because of silicosis or asbestosis, from performing his work in the last occupation in which he was injuriously exposed to the hazards of such disease. The word "disablement" means the event of being so incapacitated.

3. Where an employee suffers from silicosis or asbestosis as defined in section two of this act, and is thereby totally disabled, as disability is herein defined, or dies as a result of such disease, and the disease was due to the nature of said last occupation, in which he was employed within the period previous to his disablement as limited in this section and in sections four and five of this act, if he and his employer in such occupation were then subject to this act, the employee, or in case of his death his dependents shall, except as otherwise provided in this act, be entitled to compensation in the amount and payable in the manner provided in article two of chapter fifteen of Title 34 of the Revised Statutes, as if such total disability, as herein defined, or death resulted from injury by accident.

No compensation shall be payable for silicosis or asbestosis if the employee, at the time of entering into the employment of the employer by whom the compensation would otherwise be payable, falsely represented himself in writing as not having previously been disabled, laid off, or compensated in damages or otherwise, because of either of such diseases.

Where silicosis or asbestosis is aggravated by any other disease or injury, not itself compensable, or where disability from any other cause, not itself compensable, is aggravated, prolonged, accelerated or in anywise contributed to by silicosis or asbestosis, or where death from any other cause, not itself compensable, is accelerated or in anywise contributed to by silicosis or asbestosis, the compensation payable shall be reduced and limited to such proportion only of the compensation that would be payable if silicosis or asbestosis were the sole cause of the disability, as herein defined, or death, as silicosis or asbestosis, as a causative factor, bears to all the causes of such disability or death, such reduction in compensation to be effected by reducing the number of weekly or monthly payments or the amount of such payments, as indicated by the circumstances of the particular case.

4. No compensation for death from silicosis or asbestosis shall be payable to any person whose relationship to the deceased, which, under the provisions of this act would give a right to compensation, arose subsequent to the beginning of the first compensable disability, as herein defined, save only to afterborn children.

Where compensation is payable for silicosis or asbestosis under this act, the employer in whose employment the employee was last injuriously exposed to the hazards of such disease for sixty days or more, and the insurance carrier, if any, on the risk when such employee was last so exposed under such employer, shall alone be liable therefor; the amount of the compensation shall be based upon the wages, as defined in section 34:15-37 of the Revised Statutes, of the employee when last so exposed under such employer; and the notice of injury and claim for compensation, as hereinafter required in section six of this act, shall be given and made to such employer.

An employer shall not be liable for any compensation for silicosis or asbestosis unless such disease shall be due to the



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nature of an employment in which the hazards of such disease actually exist and are characteristic of and peculiar to the trade, occupation, process or employment, and was actually incurred in his employment, and unless total disability, as herein defined, or death results within three years after the last injurious exposure to such disease in such employment, or, in case of death, unless death follows continuous total disability, as herein defined, from such disease, commencing within the period above limited, for which compensation has been paid or awarded or claim filed as provided in this act and results within seven years after such last exposure.

5. In the absence of conclusive evidence in favor of the claim, disability, as herein defined, or death shall be presumed in fact not to be due to the nature of any occupation within the provisions of section two of this act, unless during the ten years immediately preceding the date of disablement the employee has been exposed to the inhalation of silicon dioxide ( $\text{SiO}_2$ ) dust or asbestos dust, as the case may be, over a period of not less than five years, one year of which shall have been in this State, under a contract of employment existing in this State; provided however, that if the employee shall have been employed by the same employer during the whole of such five-year period, his right to compensation against such employer shall not be affected by the fact that he had been employed during any part of such period outside of this State.

Neither compensation nor damages shall be payable for partial disability due to silicosis or asbestosis in respect to any employee subject to the provisions of this act, nor shall there be any liability in tort for damages for total disability or for death from silicosis or asbestosis. In the event of total disability, as herein defined, or death from uncomplicated silicosis or asbestosis, compensation shall, except as otherwise provided in this act, be payable to employees and their dependents as follows:

(a) Compensation for total disability, as herein defined, or death shall be paid as specified in paragraph (b) of section 34:15-12 of the Revised Statutes; except as provided in paragraph (b) of this section.

(b) If disablement occurs, or, in the case of no claim for prior disablement, if death occurs, in the calendar month in which this act becomes effective, the total compensation payable, whether for disability, as herein defined, or death or both, shall not exceed the sum of \$1,000. If disablement occurs, or, in the case of no claim for prior disablement, if death occurs, during the next calendar month, the total compensation payable shall not exceed \$1,050. Thereafter the total amount of compensation for death and total disability, as herein defined, shall increase at the rate of \$50 per month; the aggregate amount payable to be limited according to the foregoing formula for the month in which total disability, as herein defined, occurs, or, in case of no claim for prior disability, in which death occurs. Such progressive increase in the limitation of the total amount in any event payable for total disability, as herein defined, and death due to silicosis or asbestosis shall continue only until such total amount equals but does not exceed the sums which would be payable to the particular employee or his dependents had such total disability, as herein defined, and death been due to an injury by accident.

6. Unless the employer during the continuance of the employment shall have actual knowledge that the employee has contracted silicosis or asbestosis, or unless the employee or someone on his behalf, or some of his dependents, or someone on their behalf, shall give the employer written notice that the employee has contracted a compensable disease, which notice to be effective must be given within three years and ninety

days after his last injurious exposure to such disease in such employment, and also in case of death from silicosis or asbestosis unless written notice of such death shall be given to the employer within ninety days thereafter, no compensation shall be payable on account of the death or disability, as herein defined, of the employee caused by silicosis or asbestosis.

All claims for compensation for silicosis or asbestosis shall be forever barred unless a petition is filed in duplicate with the secretary of the workmen's compensation bureau, at the State House in Trenton, within one year from the date of disablement or death, as the case may be, or in case an agreement of compensation for silicosis or asbestosis has been made between such employer and such claimant, then within one year

after the failure of the employer to make payment pursuant to the terms of such agreement; or in case a part of the compensation has been paid by such employer, then within one year after the last payment of compensation.

Whenever total disability, as herein defined, from silicosis or asbestosis occurs to any employee it shall be the duty of the employer promptly upon obtaining knowledge or notice thereof to at once report such disability in the manner specified in article six of chapter fifteen of Title 34 of the Revised Statutes; but nothing in such report shall be construed to amount to an admission of fact on the part of the employer of anything therein reported.

This act shall not apply to cases of silicosis or asbestosis in which the last injurious exposure to the hazards of

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such diseases occurred before the effective date of this act.

7. Any employer, employee, beneficiary or person feeling aggrieved by any decision of the workmen's compensation bureau affecting his interests under this act may appeal the same in the manner provided in sections 34:15-66, 34:15-66.1 and 34:15-67 of the Revised Statutes.

8. Except as otherwise provided in this act, the provisions of articles two to six, both inclusive, of chapter fifteen of Title 34 of the Revised Statutes applicable to workmen's compensation for injury or death by accident, including compulsory insurance, insurance carriers, and insurance rates, shall apply to employers, employees and insurance carriers subject to this act.

## Magnesite Plant Improvements

NORTHWEST MAGNESITE CO., Chewelah, Wash., has let contracts to the Colonial Construction Company, Spokane, Wash., for removing overburden at its Keystone magnesite deposit which the company will develop. The company also has let a contract to the Riblet Tramway Co., Spokane, Wash., for the construction of a tramway extending five miles from the Keystone quarries to the mill at Browne's Lake. The rock from Keystone quarry will be used to augment the supply from the Allen, Moss and Finch quarries to take care of the anticipated demand for the product during the post-war period.

Roger Fisk, who is the field engineer in charge of the development, will continue to have charge of Keystone when it becomes a production link of the quarry system, according to C. Arthur Sargent, manager. Other officials are Earl A. Garber, vice-president and executive general manager, Pittsburgh, Penn.; H. A. Zibell, superintendent of mines, and M. E. Tilton, superintendent of the reduction plant.

## Magnesite Mine Is Busy

HEIZER-SEGERSTROM CO., is operating a new \$100,000 magnesite crushing and screening plant at its mine 30 miles south of Lovelock, Nev. Two sizes,  $\frac{3}{4}$  and  $1\frac{1}{2}$  in., are produced, the ore running about 65 percent magnesite. Two power shovels and 20 trucks take out about 500 tons daily. The ore is used as ballast in the San Francisco shipyards. Charles H. Segerstrom, Jr., Sonora, Calif., and John M. Heizer, Lovelock, Nev., are the owners, but Dodge Construction, Inc., is doing the mining under contract.

## Release Talc

THE U. S. TREASURY'S Office of Surplus Property has released 800,000 lbs. of talc as surplus on the West Coast. This is referred to as a decontaminating agent consisting of magnesium silicate, 60 percent; magnesium oxide, 29 percent; 98 percent of the mixture will pass a 325-mesh screen. The talc is packaged in  $4\frac{1}{2}$ -lb. units.



## 1945 Construction

THE PRODUCER'S COUNCIL, INC., Washington, D. C., has recently released its 1945 construction forecast which indicates a total of about \$4,800,000,000. This estimate is based on the assumption that the European war will be over, for practical purposes, near the end of 1944. The estimate is broken down by six-month periods which may be taken to represent the first two six-month periods succeeding a German armistice or the equivalent—if it occurs well before the beginning of summer. It also has been assumed that L-41 will either be revoked or greatly relaxed shortly after the termination of active warfare with Germany. This estimate, of course, will be subject to revision if the European conflict is not terminated until the summer of 1945.

New construction has been estimated to total \$3,800,000,000 in 1944, about half as large as the volume in 1943. The total volume of new construction for 1945 is estimated at a level 26 percent higher than that obtained in 1944. The year 1945, therefore, probably will mark the first of a number of years in which the volume of new construction will rise from the wartime low experienced during 1944.

It is estimated that the total volume of new residential construction will be equivalent to about 300,000 dwelling units in 1945 compared with about 200,000 in 1944. Farm construction is expected to jump from \$160,000,000 in 1944 to \$275,000,000 in 1945. New public construction, including military and naval work, is expected to drop off sharply. Highway construction, however, will increase from \$290,000,000 in 1944 to \$665,000,000 in 1945.

## Warner Improvements

THE WARNER CO., Philadelphia, Penn., will install a sand-settling device at the Van Sciver sand and gravel plant to meet a demand for a higher percentage of fines in concrete sand, particularly those sizes which pass the 50-mesh and 100-mesh sieve. The latest specification of the Corps of Engineers, U. S. Army, for civilian work, calls for a minimum of  $3\frac{1}{2}$  percent to pass the 100-mesh sieve and there are few sands in the country which meet this specification. The company comments on this improvement as follows:

"In an endeavor to settle out the fine sand grains which would pass a 100-mesh sieve, a large settling area is required. Our Engineering Department has designed a 50-ft.-diameter tank in which there is a series of rotating vanes: this is known as a hydro-separator or sand classifier. This tank is kept filled with water and entering it at high velocity, at the center, are mixed sand and water. On entering the large body of water

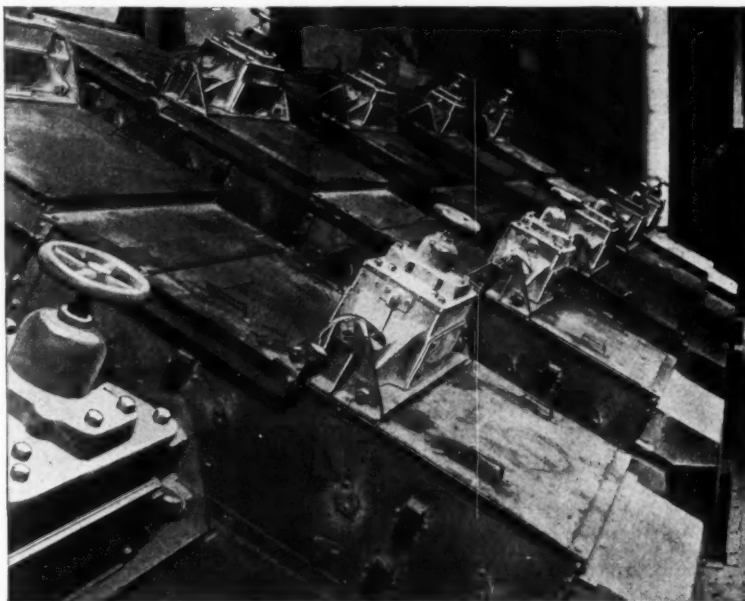
in the separator the velocity of the mixture is checked—then the sand begins to fall toward the bottom of the tank while the excess water in the tank overflows at the side. The movable vanes referred to above gradually push the sand to the bottom of the tank toward the center, where in the form of sludge it is pumped through pipes to the concrete sand-settling tank or the plastering-sand settling tank as needed.

"This sand classifier will make an additional seven or more tons of sand per hour which at present go out in the waste water, causing shoaling conditions in the Van Sciver lake, and it will enable Van Sciver to meet

new specifications. It will greatly improve the grading of Van Sciver's mason's sand by adding to those sizes passing the 50- and 100-mesh sieves. Van Sciver mason's sand has been an excellent product but it has always been coarser than many of the sands from New Jersey and the Delaware River used by bricklayers in this vicinity."

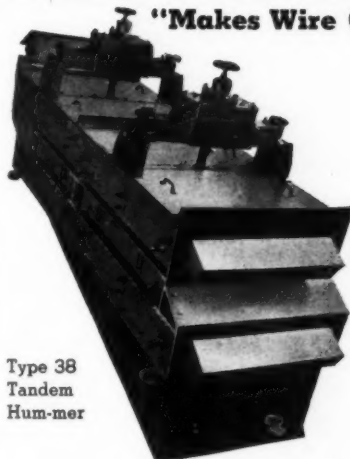
## Gypsum Post-War Funds

NATIONAL GYPSUM Co., Buffalo, N. Y., recently announced through President Melvin H. Baker that the company had increased its fund for post-war improvements and expansion from \$4,000,000 to \$7,000,000.



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## Refractories

(Continued from page 192)

tions and particularly when frequent shutdowns are unavoidable, the 80 percent alumina class is used to very good advantage. There are available refractories having an alumina content of 90 percent or higher and, while these are considerably more costly, it is highly probable that this refractory may find successful and economic application in burning

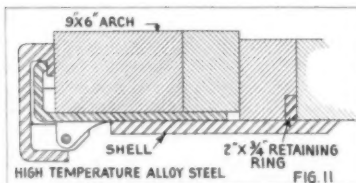


Fig. 11: Kiln nose construction

zones for certain extremely severe conditions.

Among the basic lining materials, the chemically bonded magnesite brick laid with steel sheets are used most extensively, although some economical advantages have been attained in the use of the magnesium-silicate liner. The latter is a hard burned refractory which retains its strength over a very wide range of temperatures. The coating develops readily upon this refractory in the same manner as upon a magnesite brick lining, namely, the chemically bonded class of basic brick, which has become so extensively used.

Hard burned magnesite brick are used in rotary kilns in other industries than portland cement manufacturing, but because of their higher thermal conductivity than that of the chemically bonded magnesite and still higher than that of the magnesium-silicate brick, they must be insulated with fireclay brick when the operation is carried on at a very high temperature.

The section of the kiln from the nose to the beginning of the highest temperature zone frequently is lined with the 70 percent alumina refractory, and in most cases this has proved to be the most economical. It is most advisable to use the chemically bonded magnesite and magnesium-silicate refractories over the

section on which a coating is developed. When used on either side of that zone, where the coating does not build up, these refractories are at some disadvantage.

With reference to the shape of the refractory brick used for rotary kiln linings, the standard 9-in. and 6-in. radial blocks have been employed most extensively throughout the years. The arch and wedge types offer certain advantages over the radial blocks, and their use has been increasing. The cost of the arch type blocks is the same per square foot of lining as that of the conventional rotary kiln block. Figs. 9 and 10 illustrate these types of liners.

All of the basic types of refractory linings are made in the arch and wedge shapes, and it has been found that these serve the purpose much more satisfactorily than radial blocks. For the purpose of facilitating the keying of the lining as installed arch blocks of various thicknesses, generally one which is two-thirds and one three-quarters of the full size block, are used.

The design of the nose and tail blocks, as is fully realized by all of us, is extremely important. Generally, consistent with the design of the casting used for holding the nose blocks, it is especially desirable to make them as small as possible within reasonable limits. Fig. 11 shows a design which has proved very successful, and as will be noted, this is extremely simple. The retaining ring as shown in this figure has proved very helpful in avoiding the thrust against the nose block and nose casting by the lining proper, when expansion takes place as the kiln is brought up to temperature.

The special shapes required for tapered section should be very carefully designed and kept to a minimum size. Frequently these sections are a source of considerable trouble and costly maintenance. With this should go a word of caution to the effect that too great care cannot be exercised in the laying of these shapes.

When it is desirable to reduce the diameter at the feed end to a greater degree than is effected with 18-in. or 20-in. radial shapes, far better

(Continued on page 234)

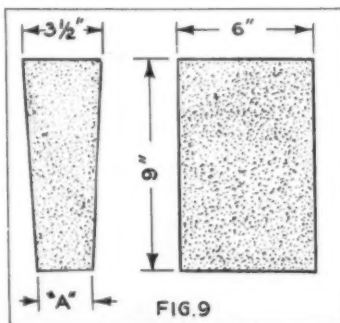


Fig. 9: Arch type rotary kiln block, 9x6 in.

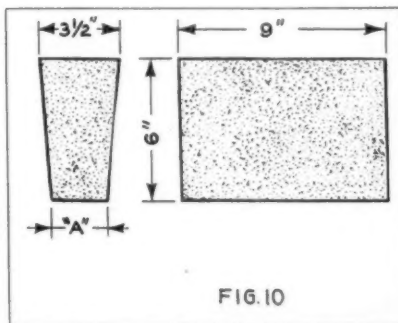


Fig. 10: Arch type rotary kiln block, 9x9 in.



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**Belt Conveyors**



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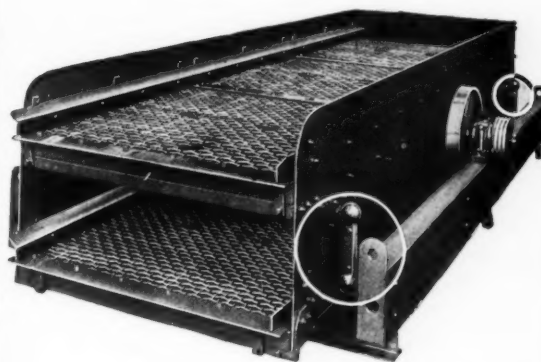
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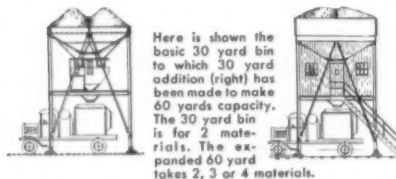


# JOHNSON Step-by-Step BINS

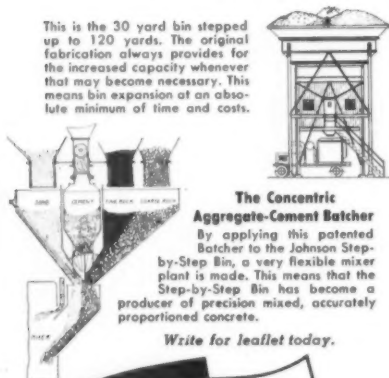


**Create a Precision Mix Plant  
Base That Grows With Your  
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To completely meet your changing bin needs, the Johnson line offers the famous Step-by-Step Bin arrangement. This arrangement allows for enlarging bin capacity as needed by keeping the first bin bought, and adding capacity to it by 30 yard steps.



Here is shown the basic 30 yard bin to which 30 yard addition (right) has been made to make 60 yards capacity. The 30 yard bin is for 2 materials. The expanded 60 yard takes 2, 3 or 4 materials.



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Champaign, Illinois

results are possible by using two shapes for building up this ring.

Both for the nose and tail construction, in many cases it is far preferable to use a refractory with high resistance to spalling conditions.

(To be continued)

## F.T.C. Files Charges Against Phosphate Assn.

FEDERAL TRADE COMMISSION filed 15 specific charges against the Phosphate Export Association on October 23. The bill filed against the Association charges the organization has entered into agreements and has controlled prices at levels which have effectively prevented new or additional production of Florida pebble phosphate rock. It further charges control from 1934, by means of private agreements between the International Agricultural Corporation, Phosphate Mining Co., and Phosphate Recovery Corporation of 80 percent of the production of Florida pebble phosphate rock from the deposits of the Pembroke Chemical Co. The bill questions an alleged informal agreement between the Florida Hard Rock Association and the P.E.A. and the French North African producers, whereby in exchange for a quota of  $2\frac{1}{2}$  to  $2\frac{3}{4}$  percent of all European phosphate business, the Florida Hard Rock Association allegedly agreed to control the only existing terminal facilities for the shipment of Florida hard rock phosphate and to control all export of Florida hard rock phosphates from the United States to Europe. The commission charges that control was effectively exercised during the life of the agreements, and that as a result of them trade was restrained.

The commission also charged that the association controlled through its members the entire low grade phosphate production of the Coronet Phosphate Co., a non-member, by means of contracts and agreements, allocating the company's production among the association's members for domestic resale. The result of such action, the commission said, had been to remove total domestic production of Coronet from the open domestic market and in so doing removing the threat of competition to the association's members.

## New York Law Closes Gravel Pit

HUGHES-KELLY CORPORATION ceased operations at its large Broad Hollow gravel pit at the edge of Babylon, N. Y., and entered a plea of guilty before Justice William F. Wolter to the town charge of violating a regulatory ordinance. Considerations of economy were said to be the main reason for giving up the fight by George I. Melter, representing the company. His company's decision

was also prompted by two recent decisions in the Supreme Court of Kings County, both of which held that the town ordinance was "prima facie constitutional." The Broad Hollow pit has been in operation under a series of owners for 20 years. The intent of the Babylon, N. Y., sand and gravel pit ordinance is to compel producers to fill in all excavations, and it provides for posting a bond of \$3500 per acre of land in which excavation is contemplated. It was pointed out by the company that the cost of filling in an acre of land to a 20-ft. depth would be \$17,000, which would not be commercially advisable.

## Masonry Cement

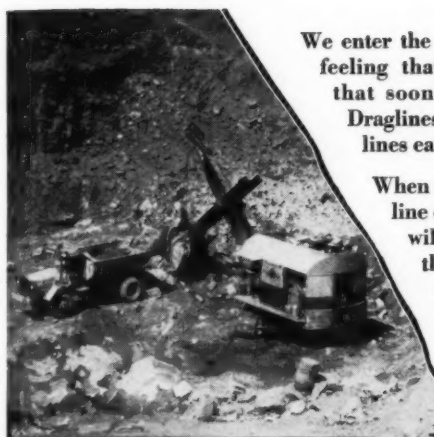
THE AMERICAN SOCIETY FOR TESTING MATERIALS has announced that although the existing standard for masonry cement, C 91, is being continued, new tentative specifications also are to be published with important changes. These include an increase in the flow of 100 to 115 percent instead of the present requirement of 65 to 80 percent. Compressive strength requirements have been raised to the present value 400 and 750 p.s.i., respectively, for the 7-day and 28-day strength requirements compared with the values in the standard of 350 to 600 p.s.i., and because in the production of good brick work a mortar possessing high water retentivity is considered desirable, this requirement is now to be greater than 70 percent instead of the current value of 65 percent.

## Object to Mica Cuts

NEW ENGLAND mica producers have been up in arms against a government proposal which would greatly reduce prices paid for mica, in some cases up to one-third. Edward Ellingwood, secretary of the New Hampshire Minerals Council and state industrial agent, recently served on the membership of a committee which went to Washington, D. C., for a conference with government officials who have agreed to a temporary compromise price slash of from 15 to 20 percent, depending upon grade and quality. Committee members in addition to Mr. Ellingwood were Kenneth E. Curran of Canaan, chairman; John M. Regan, New Hampshire Mica Mining Co.; Keene; E. Everett Smith, Canaan; and J. H. Swanson, Sandy Ridge Mica and Mining Co.

## Start Phosphate Mining

THE INTERNATIONAL MINERALS & CHEMICAL CORPORATION is preparing to again start mining in the Tennessee phosphate field on the lands of the Frierson Estate, both in the old Magee mines southeast of its plant, and in the Jonesboro area. Truck haulage will be used from mines to plant.



We enter the new year with a profound feeling that Victory is not far away—that soon LIMA Shovels, Cranes and Draglines will be coming off the assembly lines ear-marked for peacetime operation.

When that time comes LIMA will have a line of Shovels, Cranes and Draglines that will be especially designed and built for the big jobs that you have planned for the future.

This war has provided a tough proving ground for excavators and material handling equipment. It has brought to the forefront the ruggedness and dependability of LIMA-MADE equipment, built to perform under extreme pressure.

As their wartime task continues, LIMA engineers continue to make improvements in design and construction that you may have, after Victory, the best shovels, cranes and draglines built.

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Hendrick Perforated Plate is supplied in any size and shape of opening—round, square, squarround, rectangular, hexagonal, slotted, oval and tapered—in a wide range of metals. For maximum service in screening abrasive materials, Hendrick High Carbon Heat Treated Steel is especially recommended.

## Chemist Corner

(Continued from page 194)

cent  $\text{SiO}_2$  curve at the extreme left and vertically to the required percent  $\text{C}_2\text{S}$  at the base. Values may be determined to within about 0.2 percent of the calculated results.

The percent  $\text{C}_2\text{A}$  is determined on the  $\text{C}_2\text{A}$  chart by aligning values, as shown, for percent  $\text{Al}_2\text{O}_3$  and percent  $\text{Fe}_2\text{O}_3$ . The percent  $\text{C}_2\text{AF}$  is read directly from the percent  $\text{Fe}_2\text{O}_3$ , as shown in the upper, center chart.

Cement compounds are determined

uniformly across the tank and quiets the flow through the tank, which materially adds to the efficiency of the settling as there is little or no "channeling." Across the discharge end of the tank there is an adjustable height dam to regulate the water level to suit the characteristics of the material being handled and the amount of fines that are to be rejected.

The wheel at Saticoy Rock Com-

## Sand Dewatering Wheel

(Continued from page 77)

the Saticoy plant shows about the following screen analysis:

### STANDARD TESTING SCREEN

Through 3 mesh.....	100%
Through 4 mesh.....	97%
Through 8 mesh.....	86%
Through 14 mesh.....	70%
Through 28 mesh.....	44%
Through 48 mesh.....	14%
Through 100 mesh.....	3%

The wheel readily handles 75 tons per hour of the above sand, and the sand as discharged from the wheel carries 18 to 20 percent moisture.

After the concrete sand has rested in the 10- x 14- x 16-ft. deep concrete walled bin under the "wheel" for 4 to 5 hours the moisture content drops to between 8 and 10 percent. This bin is provided with perforated drain pipes that lay on the concrete floor and extend full length of the bin. The pipes are open at both ends so they may be readily cleaned.

When making plaster sand the vibrating screen is equipped with 6 mesh No. 16-gage wire screen and 600 gal. of water is used as in making concrete sand. The plaster sand shows about the following screen analysis:

### STANDARD TESTING SCREEN

Through 8 mesh.....	100%
Through 14 mesh.....	90%
Through 28 mesh.....	65%
Through 48 mesh.....	26%
Through 100 mesh.....	7%

The wheel readily handles 75 tons per hour of the plaster sand and the sand as discharged from the wheel carries about 25 percent moisture.

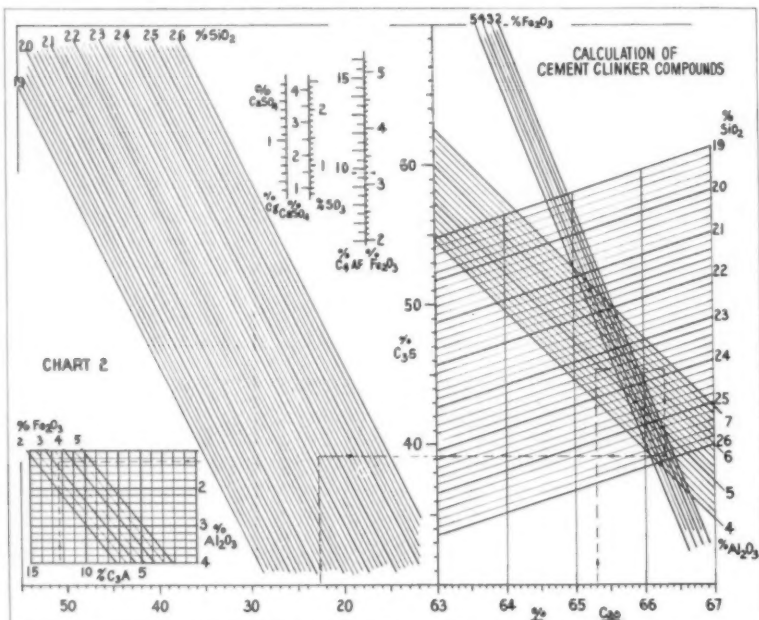


Chart 2 is used for making a rapid estimation of the compound composition of portland cement or cement clinker

similarly, first deducting the  $\text{CaO}$  in the gypsum ( $\text{C}_2$ ) from the total  $\text{CaO}$ . The value  $\text{C}_2$  is located by projecting horizontally from the  $\text{SO}_3$  value to the  $\text{C}_2$  scale.

The principal value of the chart is that of rapid operation and lack of side calculations. It may also be found useful for clinker design.

pany's plant receives its feed from the lower deck of a 4-ft. by 10-ft. S-A vibrating screen that is equipped, when making concrete sand, with 3 mesh No. 14 wire screen and about 600 gal. of water per minute flow with the sand from the screen to the settling box under the wheel.

The concrete sand dewatered at

## Add to Defense Plant

MONOLITH PORTLAND MIDWEST CO., Los Angeles, Calif., has been advised that the Defense Plant Corporation has increased its contract with the company to provide additional plant facilities at Laramie, Wyo., at a cost of approximately \$335,000, bringing total commitments to approximately \$4,640,000.

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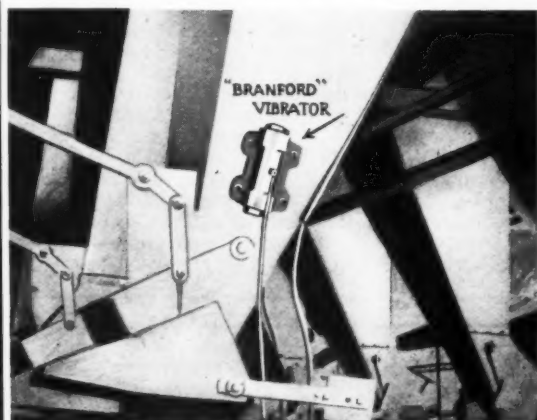
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- ★ Check up today on your material handling problems.

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Also "Branford" Vibrators for Concrete Placement.

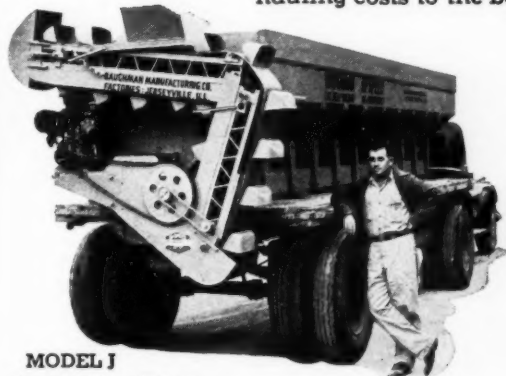
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**MODEL J**

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Unloading speed about 1 ton per minute.

Used with our popular Long or Short Wheel Base Model E, D, or H Machines for spreading, you will have the lowest cost line distributing unit available.

Increase your profitable hauling range and make short hauls more profitable! New Semi-Steel Body.

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Factories • Jerseyville, Illinois

PRIORITIES WERE NEVER NEEDED FOR OUR EQUIPMENT!

## Manpower Problems

(Continued from page 182)

soon as real demobilization starts."

A Virginia producer of crushed stone wrote:

"The labor situation in this area due to war demands has been very acute for the past two years, and we see no chance for improvement until the European war is over."

An Ohio producer of lime and crushed limestone sums up the labor situation and the problem of re-employing war veterans in the following:

"The labor situation is difficult—higher rates, overtime pay, and reduced efficiency combine to pyramid costs almost unbearably. Actual shortage of men reduces output in many instances. Crushing plants in the chemical, metallurgical and agricultural industries find it possible to absorb the higher current labor costs through continued high volumes. Many plants in the construction field, where volume is already substantially reduced, are experiencing difficulty.

"For 1945, no improvement in labor conditions is seen unless the end of the war or wars permits of an adequate supply of workmen. Even then, relief will be of short duration. Labor leaders are anticipating this condition and are planning to preserve the present take-home-pay now based on the 48-hr. week, even though the post-war week be materially shortened. Still higher labor costs per unit will then be added to the automatically higher overhead costs resulting from reduced volume. Under such circumstances, increasing prices for industry products might offer relief, but raising prices in the face of reduced volume will be difficult. Producing more at less cost per unit is a joint responsibility of labor and management. Until that principle is accepted, difficulty in maintaining both employment and profits will be encountered.

"Re-employment of veterans in the rock products industries should not cause difficulty. Many war veterans have acquired skills and have been educated far beyond their pre-war status. These will seek employment elsewhere in keeping with their new talents and in more remunerative fields. Those plants requiring additional labor should welcome the opportunity of re-employing veterans."

From West Virginia, a crushed stone producer summarized the labor shortage and outlook as follows:

"We have had barely sufficient labor during the year 1944 to man our plants for current operation. Our well drilling, stripping, and other accessory activities of every kind have had to be abandoned during the operating season. We have not been able to keep our plants cleaned up and maintained as they should be. We hope by working every man that we can employ during the winter season to catch up on these activities before the spring operating season begins. If the war continues we do not see any chance for any improvement in the situation next year.

"Under the seniority rules of our union contract, every employee in the service continues to accumulate seniority, and if he is physically able will resume his job on being honorably discharged and making application for his job within 40 days after receiving his discharge. We have no plan for employing handicapped veterans. As a matter of fact there are very few jobs that men who are seriously handicapped can do around a crushed stone plant."

Another producer of crushed trap rock in New England said:

"The labor situation as I see it will be most critical. With war factories paying such high wages, we can only expect to procure left overs and at higher rates than we are accustomed to paying. Then too, we are limited to rates based on pre-war

scales. We will of course employ war veterans whenever possible, giving first choice to those formerly employed by us."

### Sand and Gravel

One of Illinois' largest sand and gravel producers commented as follows:

"Our plans have been perfected to re-employ the war veterans as they return for their old jobs as this is the duty and the privilege of every employer. The increase in the demand for our products should and undoubtedly will enable the producers to re-employ the boys when they return as they will be needed."

A Texas producer of sand and gravel said:

"The labor supply in our territory is not so critical, but the quality of labor we are able to hire under our wage scale is not satisfactory. The outlook for 1945 as we see it depends entirely on the progress of the war. It is our plan to employ all veterans that were with us at the time they were inducted, provided they want re-employment. We are unable to use handicapped veterans as the nature of our work is such that it would be difficult for a handicapped veteran to handle."

Another Texas producer commented:

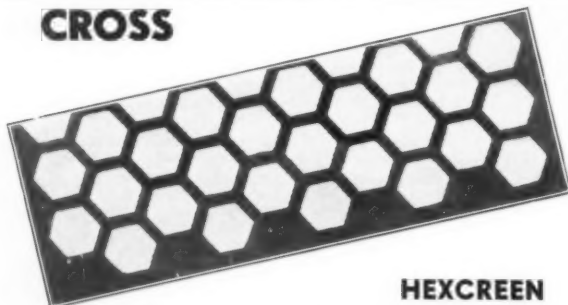
"Common labor is exceedingly short and very, very difficult to secure and to hold on the job. We are re-employing any and all war veterans we can get hold of who can do anything at all, and we expect to continue the policy. I think we will never refuse a job to a handicapped veteran, if he can do anything at all. Those boys have paid a terrific price and, as far as I am concerned, we are going to do everything in the world we can to help them."

In Pittsburgh, Penn., the War Manpower Commission has entered into the picture to the advantage of sand and gravel production. A producer wrote:

"We have been granted sufficient

(Continued on page 240)

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*Zooming  
to New Highs*

**CROSS PERFORATED STEEL SHEETS AND PLATES**

For War Production and Post-War Prosperity

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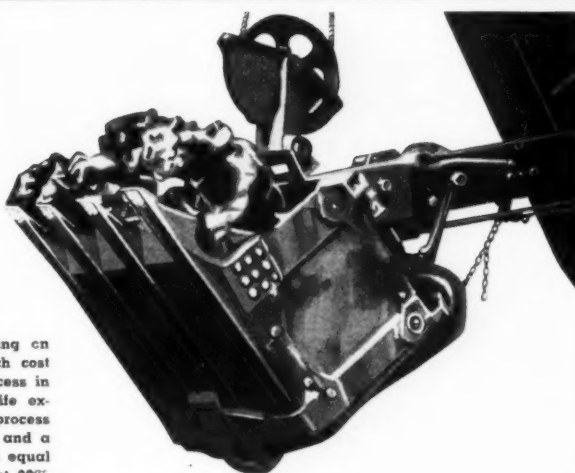
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## Resisto-Loy

### HARD-SURFACING ALLOY

Contractors find that by hard-facing power shovel teeth with Resisto-Loy they last longer, wear down slower. By retaining their sharpness they dig faster, fill buckets quicker, increase output. Resisto-Loy is also extensively used to rebuild hammer-mill hammers. When hammers are hard-surfaced with this alloy they will break more material to size quicker, whether rock, sand, minerals or food stuff.

For high speed repairing, rebuilding and hard surfacing on heavy duty equipment. Tractor driving sprockets which cost new \$180 a pair can be rebuilt by the "Two Tone" Process in 22 hrs. for \$39, saving \$141 and giving sprockets a life expectancy twice that of new parts. This new welding process holds a  $\frac{3}{4}$ " Bare auxiliary filler rod between the work and a mild steel reverse-polarity arc-welding electrode. About equal amounts of electrode and rod are consumed, using about 30% extra amperage on welding machine. Electrode and rod mix together to give a high carbon, low alloy tool steel in grain, hardness, toughness and wear-resistance. An 8-page bulletin tells all about it. Want a copy?



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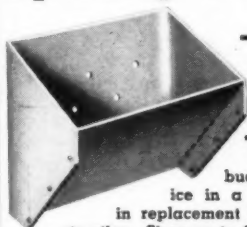
**GRAND RAPIDS (7),  
MICHIGAN**

## "TWO-TONE"

### Welding

## Specify STANDARD

### when you need



## ELEVATOR BUCKETS

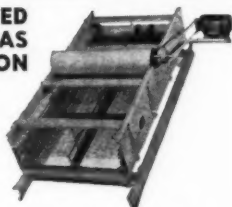
Standard designs or special buckets to your order. Skilled service in a well-equipped plant specializing in replacement buckets. Welded or riveted construction. Sizes up to 42" long,  $\frac{1}{4}$ " steel. Large or small orders given prompt and individual attention. Write for our low prices.

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- NO DEAD AREAS
- SIMPLE CONSTRUCTION

## UNIVERSAL

• Universals give continuous, trouble-free service without requiring attention. No dead areas. No frictional surfaces, such as ratchets or cams. Powerful vibratory action keeps mesh open and free from binding on most difficult materials. Eccentric weights, shaft, housings and S. K. F. Self-Aligning Ball Bearings all are 100% universalize and absolutely dust-tight.



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## Uniform Separation

Chemicals—Metallics—Non-Metallic  
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The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

- Greater Capacity
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- 99% Through 325 Mesh
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Manufacturers also of "Reliance" Crushers, Screen, Elevators, Conveyors, Bin Gates, Grizzlies. Complete crushing, screening and washing plants for crushed stone, sand and gravel.

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## Manpower Problems

(Continued from page 238)

employees by the War Manpower Commission to operate satisfactorily during 1944. Unless conditions are changed, we should have sufficient employees for 1945. We expect to re-employ war veterans and to, as far as possible, employ handicapped veterans."

From Pennsylvania, another producer wrote:

"There is no particular change in our labor situation that we know of for the time being, but 1945 will doubtless raise some problems, dependent upon what action the Federal Government may take, and dependent also on what volume of business we may have to prepare for. We are hopeful to see a declining living-cost index shortly after V-E Day, which should act better to satisfy our employees that the present high rates are reasonable and should not be changed for the time being. What may happen thereafter will depend very much on the general volume of business in this country and the trend in costs of living.

"We are planning to study carefully the case of each of our returning war veterans. We shall endeavor to fit them into our organization, whether or not they are handicapped. It is our desire not only to abide by the law, but to give these old business associates of ours the best help we can to re-establish them in civilian life, if they wish to join us again."

Robert Mitchell, president of Consolidated Rock Products Co., Los Angeles, Calif., also president of the National Sand and Gravel Association, stated his company's position in regard to re-employment of war veterans in the following article from the company house organ, *Consolidated News*:

"... each man or woman who left the company to enter the service, was in effect granted a leave of absence for the duration. They were also assured that their old job would

be waiting for them after the war or if they returned sooner. To date some five or six men and one woman who have been discharged from the service, have returned to their job with Consolidated. The Selective Service Act states that an honorably discharged veteran is entitled to his or her old job if they are physically able to perform their duties and apply for reinstatement within 40 days following their discharge.

"Naturally the company had to replace those who entered the service in order to properly maintain our vital position in the war effort construction. Because of this, it will be necessary to make certain adjustments as men return, but those adjustments will be made. The right to return to the job of their choice and earn a living is one of the principles for which our men are fighting and Consolidated recognizes its obligation first to those men who entered the service and second to those who remained with the company during the hysteria of fighting the war."

The poor attitude of much of the available labor is the substance of a Mississippi producer's comments:

"We have had to work fewer men more over-time hours (at the same basic rate) to get the job done. We have been forced to carry on repair work with the same crew that operates the plant, so most repair work has been done on over-time. A number of repair parts have not been available and we had gone to machine shops and had them made at twice or three times the cost of the regularly manufactured cost. Labor has been very indolent. We never know what we can do on a given day until we get to the plant and see how many men have reported for work. In the South, especially among negroes, the benefit checks sent to families of service men seem to supply numerous families with all the money they need, so why work.

"However, through it all, we are keeping up with our orders fairly well. Sometimes we get discouraged

but we are learning a lot just like we did during the depression. We are really finding out what we can do when we have to. When I get so low I think I am about to the bottom, I get out a copy of Elmer Wheeler's "Take An Hour to Say 'NO,'" read it, then read Eric Johnston's "America Unlimited," then get ashamed of myself for getting 'low' and go on again."

An industrial sand producer commented:

"At present we are not operating with organized labor. Labor is scarce, especially skilled labor. We expect plentiful labor supply in our community after end of the war. We expect labor difficulties in the post-war period in view of the outcome of the recent presidential election.

"We have no specific plans for re-employing war veterans. However, we expect to make a place for our veterans who are able to work so far as is reasonable to do so. Some of the labor which we have had while they were away has been 'cocky' and we will not feel badly about replacing them with the war veterans any place we can. Since we do not have organized labor we do not expect many complications in doing this."

A crushed slag producer wrote: "The labor situation will be largely dependent on the war operations, first in Germany, and then with Japan. It is our judgment that the tendency to try to raise wage rates too high will boomerang seriously on labor for the long pull and will react in an unsound way on our economic structure.

"This company plans to re-employ all war veterans who wish to return to this company. We probably will not stick to the 40-day minimum requirements in the Selective Service Law but would automatically extend that time to at least 90 days in the case of handicapped or sick returning veterans."

The foregoing excerpts from letters received are but a few, but serve to indicate the labor situation in the rock products industries and the outlook for 1945.



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## Corundum in Demand

BUREAU OF MINES reports a very substantial increase in corundum production in the United States since the outbreak of the war. Development of corundum deposits in Georgia, North Carolina, and Montana has been revived. Current reports on domestic production cannot be revealed as the information is considered confidential.

Except for the diamond, corundum is the hardest mineral known. It is used in powdered form for grinding optical lenses and other parts of precision instruments, range finders, gun sights, etc. Coarser grades are made into grinding wheels for processing iron and steel products—shells, lathes and boring tools, cutters, gear differentials, carburetors, surgical instruments, and other essential items.

Abrasive or "common" corundum is an aluminum oxide, opaque, bluish or gray color, and exhibits a well-developed basal cleavage, crystallizing in the hexagonal system. In its pure, translucent or transparent form it is a gem of high value which, according to color, is a sapphire (blue), ruby (red), emerald (deep green), topaz (yellow), aquamarine (light blue-green). More complete details may be obtained in Information Circular 7295 by Robert W. Metcalf, Bureau of Mines, Department of Interior, Washington 25, D. C.

## "Dry Ice" Blows in Well for Washing Purposes

JOHNSON SAND & GRAVEL CO., Roy, Utah, used oil well methods in cleaning out the company's new 540-ft. water well with dry ice bombs. The first 150 lb. of solidified carbon dioxide gas dropped into the well brought the water near the surface, and another 150 lb. dropped in later caused the well to "blow" about three minutes later. This method was used to blow sand from around a screen in the bottom of the well and to enlarge the well at the bottom to obtain more water. When the dry ice melts, it goes back into its gaseous form, creating a great pressure. A pump capable of drawing 1100 gal. per minute will be installed to obtain water for washing sand and gravel and also for irrigation purposes.

## Bituminous Sandstone

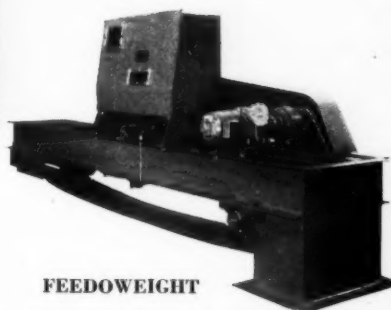
ACCORDING TO THE GEOLOGICAL SURVEY, Department of Interior, a possible source from which oil may be recovered in the future is to be found in the large deposits of bituminous sandstone near Edna, San Luis Obispo County, Calif. An investigation of these deposits discloses approximately 282,880,000 short tons of accessible bituminous material which would yield about 26 gal. per ton. The area involved in the survey covers about 22 square miles.



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► For Splicing and Patching Conveyor, Elevator and Transmission Belts.

### TALCOTT'S ACME STEEL PATCH FASTENERS

The handiest fastener made for splicing and patching tears in conveyor belting. Patches are easily and quickly made.

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Portable crushing plant set-up for C. A. A. airport job near Janesville, Wis.

### C.A.A. Airport

AN EXAMPLE of the extent to which rock products are used in airport construction is found in the C.A.A. airport now being built on a 735-acre tract five miles south of Janesville, Wis. The runways are being built with a subbase about 14 in. thick, using gravel and crushed limestone. A layer of gravel is placed first. This is compacted to 4-in. thickness, with a sheep's foot roller, using clay and water for compaction. Next, another 4-in. compacted layer of gravel is

placed. On top of this is placed a  $\frac{3}{4}$ -in. layer of minus  $\frac{3}{8}$ -in. stone screenings. The next layer consists of a 4-in. compacted layer of crushed limestone sized between  $2\frac{1}{2}$  in. and  $\frac{3}{4}$  in. On top of this is another  $\frac{3}{4}$ -in. binder layer of minus  $\frac{3}{8}$ -in. screenings. Then a 2-in. mat of asphalt is poured for the surface of the runways. A priming coat of MC1 and a seal coat of RC2 with stone chips is being used.

Three runways are being constructed, each 5200 ft. long and 150

ft. wide, having 50-ft wide returns (taxi runways).

Crushed stone is being provided by the Ryan Construction Co. of Janesville, and Art Overgaard of Elroy, Wis., who have set up portable crushing and screening plants on a 5-acre tract near the airport. A 20-ft. thick ledge of limestone is being quarried, which has an overburden of about 6 ft. These two contractors will supply about 70,000 cu. yd. for this project. Typical portable plants are used, each having an hourly capacity of about 115 cu. yd. The two plants produce nearly 25,000 cu. yd. in 11 hours.

### Study Vinsol Resin Cements

COMMERCIAL production of air-entraining portland cement by inter-grinding of small quantities of Vinsol resin in the manufacturing process is a rather recent development. The properties of some of these Vinsol resin cements, however, were such that it was impossible to test them according to the existing specifications. New tests were required as well as the development of new testing techniques in order adequately to evaluate the properties of the new material.

The National Bureau of Standards recently procured 64 commercially manufactured Vinsol resin cements in order to study the water requirements of the pastes and mortars, the quantities of air entrained in the various pastes, mortars and in concrete, and also to make a survey of strengths of the test specimens.

Neat pastes of Vinsol resin cements were stickier than the neat pastes of the untreated cements and also had a tendency to stiffen more rapidly. The cement-sand mortars made of Vinsol resin cements and proportioned according to present Federal specifications were in most cases more plastic than the mortars of the untreated cements. Whereas the neat pastes of Vinsol resin cements required as much or more water than the neat pastes of the untreated cements, the cement-sand mortars usually required less water for the same workability.

Concretes made from the different cements entrained quantities of air ranging from 1 to 14 percent. The air contents of the pastes, the 1 to 3 mortars, and the 1 to 2.75 mortars were not indicative of the air entrained in concrete. Of the various mortars and pastes tested, the 1 to 4 mortar, which has been proposed as a performance test, had the greatest range of air contents with the different cements.

Most of the Vinsol resin cement mortars had both tensile and compressive strengths greatly in excess of specification requirements. A few of the cements, however, failed to meet the 7- and 28-day compressive-

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strength requirements. The cements had a wide range of strengths at 3 days; for example, tensile strengths were obtained for the different cements ranging from 195 to 465 lb./in.<sup>2</sup> and compressive strengths ranging from 900 to 3,360 lb./in.<sup>2</sup>.

## Letter to the Editor:

### Granular Sub-Base for Pavement

Sir:

I have just read with understanding your remarks on granular sub-bases and quotations from a letter from Tom Stanton appearing in *Rock Products*, October, 1944, p. 51.

The Solano County, California, work in 1921-1922, was observed by Walter N. Frickstad, then a member of the Field Staff of the Bureau but now City Engineer of Oakland, Calif. We have adopted soil mechanics' methods in Oakland because of Mr. Frickstad's early observations on the importance of granular materials, and because of my training in these matters while a member of Mr. Stanton's laboratory staff.

But we have gone still farther in the matter. We have prepared specifications for the use of granular materials, not only for base and base foundations but we have provided alternates for use of stabilization of second grade granular materials usually called waste materials.

The City of Oakland also has used emulsion stabilized subgrade cover under portland cement concrete. The effect of this treatment of subgrade is to eliminate unequal swell and shrinkage of the slab itself. Mac Arthur Boulevard near Broadway is paved with portland cement concrete laid on an emulsion stabilized base and this section is the only section of pavement, either black or white, that has not shown signs of distress which, in some cases after less than 12 years, approaches a condition of failure.

STANLEY M. HANDS  
Testing Engineer,  
City of Oakland

## Airport Construction

IN SPITE OF the fact that the big program of air field construction for the armed services has been completed there is still a considerable amount of extension of facilities. At Davis-Monthan army air field, Tucson, Ariz., about \$1,577,500 will be spent for warm-up aprons, hangar, extension of taxiway, paving, etc. Similar work at Gowen Field, Boise, Idaho, will cost \$1,519,865. At Pocatello army air field, the government will spend \$1,290,193. Extensions at Kirtland Field, Albuquerque, N. Mex., will cost \$1,260,406. Additions at Lowry Field, Denver, Colo., will amount to \$992,680. Chatham army air field near Savannah, Ga., will have improvements costing \$1,356,000. At

Barksdale Field, Shreveport, La., the authorized expenditure for extensions is \$1,083,519. This work should result in a considerable volume of business for producers of aggregates, cement, concrete pipe, and block.

## Phosphate Mine Expansion

HOOVER & MASON PHOSPHATE Co., Mt. Pleasant, Tenn., is reconstructing the old line of railroad track to its mines above Scott's Mill, using labor of German war prisoners. This is being done, according to the report, so that the rapidly decreasing flow of material from the old Kittrell and Solita mines may be supplemented although it will doubtless be several years yet before these old mines are completely exhausted.

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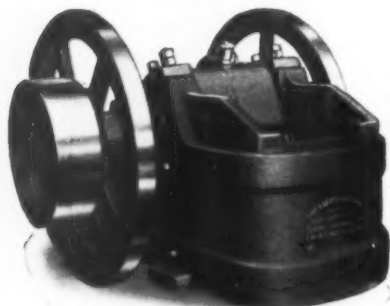
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## Acceptance of Concrete Work as Waiver of Defects

By **LESLIE CHILDS**

**A**S A GENERAL RULE, where one inspects, approves and pays for work, he will not thereafter be allowed to claim damages for defects therein. For, in the absence of fraud, the acceptance of work will bind an owner, where he had ample opportunity to point out defects but failed to do so.

However, there is an exception to this rule where the defects are latent and were not evident at the time of inspection but appeared later. In such case, if the faults are the result of improper workmanship, acceptance may not prevent the owner from claiming damages therefor.

And, by the nature of concrete work, this exception to the general rule is frequently invoked in this field of construction. This for the reason that defects in a concrete job may not immediately appear, especially if the one making the inspection is not an expert in this line. And, as an illustration of judicial reasoning in a situation of this kind, the following case is in point.

Here the plaintiff employed the

defendant to lay a concrete sidewalk in front of his residence. The contract price was 20 cents per square foot, and the defendant agreed to do the work in a workmanlike manner, a first class job.

Upon completion, the defendant was paid in full. The work looked all right to the plaintiff, and the defendant stated if the job was not first class he would make it good. At this stage there was nothing about the work that would lead the plaintiff to suspect any defects.

However, some three or four months later the concrete began to crack, and the slabs to fall apart. Plaintiff then called in a couple of concrete men, and they pronounced the walk worthless, because the materials that went into the making of the concrete were not properly mixed.

Plaintiff thereupon called upon the defendant to either build a new walk, or refund the money he had been paid. The defendant refused to do either, and took the position that since plaintiff had inspected, approved, and paid for the walk he should be deemed to have waived any defects therein.

Plaintiff then filed suit for the price of the work, and recovered judgment. The defendant appealed, and the higher court in affirming the judgment reasoned:

"It is true that, as a matter of law, if one inspect and approve work done and pay the price, he cannot subsequently recover the amount on the ground that the work was not done according to specifications. But the rule applies only in cases where the owner has ample opportunity to discover the defects in the work previous to the approval and payment.

"The rule does not apply in cases like this, where the owner had no knowledge of the construction of sidewalks or of the mixing and laying of concrete, and where the defects cannot be discovered on bare inspection. The testimony shows that the defects in a concrete walk do not appear until the concrete has 'set,' which ordinarily takes some time.

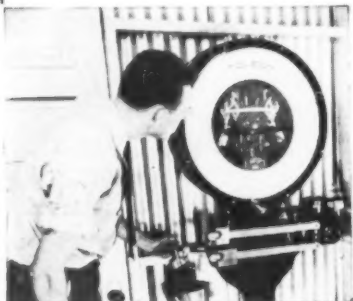
"When the work in this case was done, it appeared to be up to standard. Defendant immediately asked for a settlement, and was asked by plaintiff if he had done a first-class job, and he replied that, if he had not, he would make it good. \* \* \* The lower court held that, inasmuch as the sidewalk was worthless, defendant should return the price \* \* \*. We think the judgment is correct, and it is accordingly affirmed, with costs in both courts." (124 So. 517)

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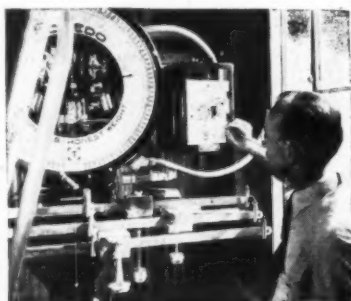
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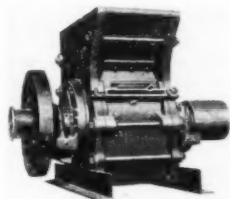
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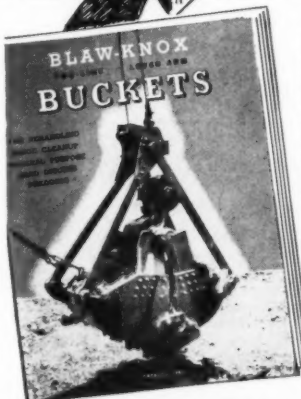
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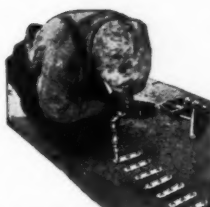


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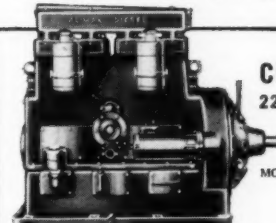


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**Damp Powder**

BLACK POWDER, used in mining and by the armed services, is more sensitive and ignites more quickly when it contains a small amount of moisture, according to Bureau of Mines chemists. Experiments have been made by the chemists in which black powder has been tested under various conditions to determine how much moisture should be present to minimize dangers of accidental ignition and how much is required to curb the possibility of the powder being thrown into suspension in air.

Some of the conclusions arrived at by Raymond H. Moore and Wilbert J. Huff in this report are as follows:

Humidification of black powder increases the hazard from ignition by flame or hot particle, if the humidification does not raise the moisture content to a point where the powder disintegrates; fine-grained powders are more readily ignited by flames or hot particles than coarse-grained powder.

An exothermic self-accelerated reaction occurs when black powder is heated to a sufficiently high temperature below the ignition point, and this reaction ultimately will lead to ignition unless some means of removing the heat generated is provided. This reaction may become important at temperatures near that of the melting point of sulfur (one of the ingredients of black powder).

Frictional impact and pressure friction tests indicate that black powder is relatively very insensitive to friction, at least, at ordinary temperatures and in the lower range of temperatures in which in time the powder might have ignited from heat alone; impact tests indicate that under moderate confinement (such as in the Bureau's tests) black powder is moderately sensitive to impact; the presence of moisture in amounts above 2 to 3 percent decreases the sensitivity of black powder to impact.

Humidification of black powder is an effective means for lowering the dispersibility except in those instances where the deposit has been disturbed or mechanically agitated before being subject to a blast (of air).

Aside from the electrical effects involved, the importance of humidity in minimizing accidental ignition of black powder probably is related to the decrease in the sensitivity of the black powder to impact when so moistened. This relationship suggests that many of the disasters attributed to heat or sparks were in fact initiated by electrical effects or impact. Care should be taken to keep black powder cool—temperatures certainly should not approach 100 deg. C. (212 deg. F.).

The publication, Report of Investigations 3782, "Studies of the Effect of Humidity on the Sensitivity and Dispersion of Black Powder," may be

obtained free from the Bureau of Mines, Department of the Interior, Washington 25, D. C.

**Industry Leader Dies**

C. BARNEY IRELAND, vice-president of the Birmingham Slag Co., Birmingham, Ala., died suddenly December 26 at his home. He was 51 years old. Mr. Ireland had been with the company since 1916 when he and his father and two brothers purchased a controlling interest in the company. In 1926 he was made vice-president and served in that capacity until his death. With his brothers, he was instrumental in expanding the activities of his company to include sand and gravel, crushed stone, slag, lime-putty, ready mixed concrete, and concrete products. Mr. Ireland also was president of the Roquemore Gravel and Slag Co. and the Montgomery Gravel Co. He is survived by his widow, two sons, a daughter, and a brother, C. E. Ireland, president of the Birmingham Slag Co.

**New Incorporations**

Kolinski Concrete Co., Milwaukee, Wis., has been organized to deal in ready-mixed concrete, cement, sand, gravel and all kinds of building materials, with a capital stock of 1000 shares, no par value. Incorporators are M. C. Kolinski, Willard L. Schunk, Francis W. Rausch, 7139 W. Greenfield Ave., West Allis, Wis.

Federal-American Cement Tile Co., 8 S. Dearborn St., Chicago, Ill., has been incorporated to manufacture, buy, sell and deal in precast or other cement, roofing tiles and other cement products. Authorized capital 100 shares common stock, par value \$10. Incorporators are C. S. Freund, L. J. Wilhartz and S. E. Hirsch. Correspondent is William Ruger, 1501 First National Bank Bldg., Chicago, Ill.

**Manufacturers' News**

Caterpillar Tractor Co., Peoria, Ill., has announced the appointment of Merwin T. Farley as supervisor of parts depots. Since 1942 Mr. Farley has assisted the purchasing department in material procurement and last year developed the company's extensive military parts processing program. D. M. Gilbert, general superintendent of parts, has been assigned Mr. Farley's responsibility for parts processing. Harold H. Bosecker has been advanced to superintendent of parts processing.

Wickwire Spencer Steel Co., New York, N. Y., announces that the accounts receivable, accounts payable and credit departments of the company and its subsidiaries have moved to River Road, Buffalo, N. Y., with A. V. Olson in charge of the accounts receivable and accounts payable departments and Colin W. Moore as head of the credit department.

Blaw-Knox Co., Pittsburgh, Penn., has announced that Paul J. Wolfert, assistant to the manager of construction equipment of the Blaw-Knox Division, has been promoted to export department engineer, with headquarters in New York, N. Y.

United States Rubber Co., New York, N. Y., has named John Blake manager of marine cable sales, with headquarters at 1230 Sixth Ave., New York, N. Y.

The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has won for the second year the highest award in the National Victory

Garden Institute competition.

Vulcan Iron Works, Wilkes-Barre, Penn., announces the appointment of H. R. Pittman as treasurer of the company. He succeeds W. W. Moos who has resigned. Mr. Pittman has been connected with the company for 27 years.

Iron & Steel Products, Inc., Chicago, Ill., has announced the appointment of David Newhall as vice-president in charge of the New York district, with headquarters for the present at 780 Riverside Drive.

Wood Shovel & Tool Co., Piqua, Ohio, has appointed E. H. Branning, head of hardware and tools procurement division of Army Service Forces, as general manager of the company.

The Timken Roller Bearing Co., Canton, Ohio, announces the appointment of J. Ringen Drummond, experimental engineer, as assistant factory manager of the company. He succeeds H. M. Richey who became factory manager last December.

United States Rubber Co., New York, N. Y., has appointed James E. Power as eastern sales manager of the mechanical goods division.

Robins Conveyors, Inc., Passaic, N. J., announces that Elmer C. Salzman, vice-president in charge of sales, recently arrived in Rio de Janeiro, Brazil, on company business. He will stay about one month.

The Marion Steam Shovel Co., Marion, Ohio, has added to its list of distributors the Tulsa Equipment Co., Tulsa, Okla., representing the State of Oklahoma; Texas Equipment Co., Houston, Texas, for southwestern Texas; Shaw Sales & Service Co., Los Angeles, Calif., for southern California; and Shaffer & Co., Brazil, Ind., for southern Indiana and western Kentucky.

Pittsburgh Plate Glass Co., Pittsburgh, Penn., announces the appointment of C. Robert Fay as comptroller, succeeding Stuart M. Campbell who has resigned.

Independent Pneumatic Tool Co., Chicago, Ill., has announced that W. H. Brewer, general manager of the Aurora, Ill., factory has retired from active service.

Gar Wood Industries, Inc., New York, N. Y., announces the promotion of Amos E. Heath, formerly manager of the company's Washington branch, to the new position of general district manager of the Washington and Central Seaboard District.

Tyson Bearing Corp., Massillon, Ohio, announces the election of Hamilton O. Penn, head of the H. O. Penn Machinery Co., New York, N. Y., as a director of the company.

Pioneer Engineering Works, Inc., Minneapolis, Minn., has appointed the Martin-Roosa Tractor & Equipment Co., Cedar Rapids, Iowa, as distributor for the territory of eastern Iowa and ten counties in northeastern Missouri.

Hercules Powder Co., Wilmington, Del., has purchased a UC45F twin-engine, low-winged Beechcraft passenger monoplane for the use of its executives travelling on war work.

Wickwire Spencer Steel Co., Buffalo, N. Y., has announced the appointment of R. L. Hoenstein as superintendent of the Mt. Wolf, Penn., plant of the company. Mr. Hoenstein formerly was chief chemist at the plant. In his new position he will be in charge of all production activities.

Lima Locomotive Works, Inc., Lima, Ohio, announces the appointment of eight new distributors for Lima shovels, draglines and cranes: Held-McCoy Machinery Co., 3201 Brighton Blvd., Denver 5, Colo., for the State of Colorado; Contractors' Equipment and Supply Co., Springer Bldg., Albuquerque, N. M., and Stanton St., El Paso, Texas, for New Mexico and western Texas; Interstate Machinery & Supply Co., 1006-10 Douglas St., Omaha 2, Nebr., for State of Nebraska and western Iowa; Waterloo Con-

struction Co., 524 Park Road, Waterloo, Iowa, for eastern Iowa; Phillippi-Murphy Equipment Co., 360 Hoover St., N. E., Minneapolis 13, Minn., for part of Minnesota and northwestern Wisconsin; Smith Commercial Body Works, Inc., 1620 First Ave., North, Fargo, N. D., for northeastern Montana, northwestern Minnesota and the State of North Dakota.

The B. F. Goodrich Co., Akron, Ohio, has presented George Hamm, manager of the Kansas City district of the industrial products sales division, with a 40-year pin. Mr. Hamm has been in his present post since 1922.

Lyle Hosler Advertising Agency, Peoria, Ill., has announced that A. R. Thomson, formerly director of training for R. G. LeTourneau, Inc., has become associated with the agency in Peoria, Ill.

General Electric Co., Schenectady, N. Y., has appointed George E. Simons as advertising and sales promotion manager of the air conditioning and commercial refrigeration divisions, Bloomfield, N. J.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has announced the appointment of two specialists in Pacific region sales. They are Frank Sullivan, a specialist in cement, crushing, and mining machinery in the Seattle district office, and E. J. Baireuther, who will be in the Denver office as a specialist in electrical apparatus and in cement, crushing, and mining machinery.

## Army-Navy Awards

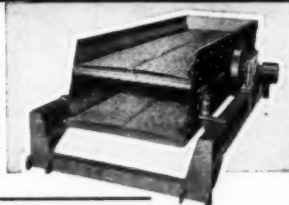
Trackson Co., Milwaukee, Wis., manufacturers of tractor equipment, gun mounts and special equipment for amphibious military craft, announces that a second white star has been added to the Army-Navy "E" flag. This is the third award made to the company.

A. Leschen & Sons Rope Co., St. Louis, Mo., has been awarded the Army-Navy "E" pennant for high achievement in the production of war equipment.

## DIAMOND BALANCED VIBRATORS



Violent vibration for fast, positive separation all over the screen—controlled by accurately balanced design for smooth action. Long life, low maintenance costs. No choke. Fast delivery. 11 Sizes in 1-2-2½-3-4 Decks. Tell us your needs. Write for Bulletin D42V.



DIAMOND IRON WORKS, INC.  
AND THE MAHR MANUFACTURING CO. DIVISION  
1800 NORTH SECOND ST., MINNEAPOLIS 11, MINNESOTA

## TRUXMORE

WORLD'S BEST 3RD AXLE

CARRIES two payloads in one.  
SAVES in first cost (up to 40%), on insurance (up to 50%), fuel costs (up to 20%), tires (50% to 100% longer life), road time (up to 20%), breakage of fragile loads, license fees, dead weight, maintenance costs.  
Write for Circulars

DOUBLES YOUR TRUCK CAPACITIES



NATIONWIDE SALES & SERVICE  
THRU TRUCKSTELL DISTRIBUTORS

## WE OWN AND OFFER

## NEW AND USED EQUIPMENT

### DIESEL GENERATORS

- 1-Diesel Generator Set, 300 HP., Fairbanks-Morse Diesel, 4 cylinder, Model 32, complete with auxiliaries, 237 RPM, direct connected to a 250 KVA Fairbanks-Morse Generator.

### AIR COMPRESSORS

- 1-Ingersoll-Rand Duplex Air Compressor, Type XB, 582 cu. ft. motor driven.
- 1-Ingersoll-Rand Imperial, Type XB-2, Duplex Air Compressor, 12"x7½"x12".

### COOLERS AND DRYERS

- 1-3½"x10"; 1-10"x10" and others.

### CRANES AND SHOVELS

- 1-P & H 1-rd. Shovel, Gasoline, Reconditioned.
- 1-Locomotive, 4-wheel, 10-ton, 25' boom, Brown Hoist Co.

### CRUSHERS

- 2-No. 3-6-8 Gates Gyratory Crushers, Style D.
- Others—various types and sizes.

### HOISTS

- 1-S. Flory Mfg. Co. single drum Hoist, Handles 11 ton car up 12½' grade 500 ft. per min.

### KILNS

- 1-8x9½x180 ft. And others.

### LOCOMOTIVE AND CARS

- 1-4-ton Vulcan Iron Works, Class AW-1, Worm Gear Gasoline Locomotive, 36" gauge.
- 6-5-vd. Koppel 2-way Dump Cars, 36" gauge.

### DRILLING EQUIPMENT

- 1-No. 33 Ingersoll-Rand Leyner Drill Sharpener.
- 1-Improved Type No. 22 electric power Loomis Machine Company Clipper Drill, complete with motor.
- 2-Ingersoll-Rand DCR No. 430 Drills.
- 2-Denver-Gardner Co. (Turbo-Waugh) No. 37 Drills.
- 4-Denver-Gardner Co. (Denver-Waugh) No. 95 Drills.

### FEEDERS

- 2-Balley Pulverized Coal Feeders, Type No. 2, complete with steel hoppers, 8½ ft. dia x 12 ft. cone bottom.

### GRINDING EQUIPMENT

- 2-5½"x22" Allis-Chalmers Tube Mills.
- 3-5½"x20" F. L. Smidth Tube Mills, Silex Lined.
- 1-5"x22" Tube Mill.
- 1-5"x10" Tube or Ball Mill.
- 1-4-roll Raymond Mill.
- 3-Giant Griffin Mills.

### ELECTRIC MOTORS AND MG SETS

- Large stock, rebuilt, AC or DC, 25 and 60 cycle.

### AIR SEPARATOR

- 1-14 ft. Sturtevant Air Separator, New 1941.

### TRACK SCALE

- 1-Comstead (Carnegie-Illinois Steel) Standard Track Scale, 46'-100-ton capacity. Complete.

### TURBINE

- 1-100 HP. Westinghouse Turbine, 2700 RPM, direct connected to 100 HP. Westinghouse Gear Reducer. Ratio 3 to 1.

## WEBBER EQUIPMENT CO.

New and Used Equipment

17 East 45th St., MU. 2-6511

New York 17, N. Y.

## Los Angeles Meeting

FOLLOWING the successful meeting in Sacramento on November 3, of the rock, sand and gravel producers of California with the State Highway and other officials and Stanton Walker, and the equally satisfactory meeting of November 6 in San Francisco, the members of the rock, sand and gravel and ready mixed concrete industry of Southern California attended a dinner at the Biltmore Hotel in Los Angeles on the evening of November 8th at which Stanton Walker was the guest of honor. Many of the prominent state, county and city engineers were present as well as those from the United States Engineers Office and the Tenth Naval District of the United States Navy at San Diego.

ROBERT MITCHELL acted as chairman of the meeting and expressed the gratification of the producers at having Stanton Walker as their guest and the great hopes they had of his help in the solving of many of their production problems.

As in the case of the Sacramento and San Francisco meetings, the object of this meeting was to coordinate

the efforts of the producers and those of the engineers of the users in an attempt to simplify to the greatest practical extent the number of sizes of aggregates which the producers were called upon to supply.

The first speaker was Frank Gillelen, president of the Board of Public Works of the City of Los Angeles, an experienced engineer who knows and understands the problems of the producers, as his remarks showed. Mr. Gillelen was emphatically in favor of the program which he felt would not only simplify the production problems of the producers but as well tend toward the securing by the users of aggregates and ready mixed concrete of a more satisfactory nature.

The address of Stanton Walker which followed not only brought into close focus the handicaps under which the producers were working in attempting to supply an uncalled for number of classifications of aggregates, but emphasized as well the lack of necessity of specifying different sizes of aggregates by different engineering bodies when these aggregates were to be used in identical construction work. At the con-

clusion of his address, Mr. Walker answered many questions propounded by both the producers and the engineers present.

The guests of the industry attending the dinner, in addition to Mr. Walker, included prominent state, City of Los Angeles, county, U.S. Engineers, and U.S. Navy engineers.

The industry was well represented at the dinner, the list of the producers attending and the number of the personnel of each is as follows:

Arrow Rock Co. ....	3
Azusa Rock & Sand Co. ....	5
Richard R. Ball .....	1
Blue Diamond Corporation .....	5
Chandler's Palos Verdes Sand Co. ....	1
Consolidated Rock Products Co. ....	15
Graham Bros., Inc. ....	12
John D. Gregg .....	4
Manning Bros. Rock & Sand Co. ....	2
Owl Rock Products Co. ....	4
Edward Sidebotham & Son .....	1
Service Rock Co., Riverside .....	1
Triangle Rock & Gravel Co., San Bernardino .....	2
S. H. Bacon Materials Co. ....	2
E. Lockett & Son .....	2
Security Materials Co. ....	1
Transit Mixed Concrete Co. ....	4
H. G. Feraud, Executive Secretary of the Rock, Sand and Gravel and Ready Mixed Concrete Industry	

## Classified Advertisements

**POSITIONS WANTED—POSITIONS VACANT**  
Set in six-point type. Minimum \$1.00 each insertion, payable in advance.

**INFORMATION**—Box numbers in care of our office. An advertising inch is measured vertically in one column. Three columns, 30 inches to the page.

**CLASSIFIED**—Displayed or undisplayed. Rate per column inch, \$5.00. Unless on contract basis, advertisement must be paid in advance of insertion.

### FOR SALE

#### PULVERIZERS

One (1)—Sturtevant Vertical Emery Mill, new emery stones recently. Price \$675.00  
Four (4)—Kent Maxcon Ring Roll Mills, in good running condition, may be seen in operation. Price, each, \$1675.00  
One (1)—Bradley 3 Roll Pulverizer. Price, \$1150.00

**WHITEROCK QUARRIES**  
Belleville, Penna.

#### FOR SALE

1—Ea. Twin City 4 cylinder Gas Engine, 7½"x50" Bore and Stroke, Ser. No. 359054, B.E. with Radiator Intake Manifold Heater, Fibre Universal Joint Coupling, Master Clutch and Gear Reduction complete to fit Northwest Shovel, Model 5. Price F.O.B., Gladstone, Ill., \$1,000.  
1—Ea. 27-E Koehring Paver, Model 1-A, Price \$1,200 F.O.B., Gladstone, Ill.

**FRED R. MCKENZIE & COMPANY**  
405 Bondi Bldg.      Galesburg, Ill.

#### FOR SALE

50 HP 1200 RPM Squirrel Cage Motor.  
75 HP 900 RPM Slip Ring Motor, 440 Volt 3 Phase 60 Cycle.

**G. & W. H. CORSON, INC.**  
Plymouth Meeting, Pa.

#### ELECTRICAL MACHINERY

Motors and Generators, A.C. and D.C., for sale at Attractive Prices. Large Stock. New and Rebuilt. All fully guaranteed. Send us your inquiries.

**V. M. NUSSBAUM & CO.**  
FORT WAYNE, IND.

2½ yd. Electric Cat. Shovel, New 1939.  
4 yd. Electric Cat. Quarry Shovel, 120-B.  
1½ yd. & 1¼ yd. Shovel-Crane-Drags, combs. Shovel Front &/or Parts for ¾ yd. P&H 206.  
Monaghan 3 yd. Electric Walker Dragline.  
2 yd. 50-B Diesel Crane-Drags, Cummins eng.  
1½ yd. Northwest Crane-Drags, 40-50' boom.  
1 yd. Osgood Dragline-Crane, with buckets.  
¾ yd. Universal full swing Crane, 30' boom.  
Hoists—Misc. Inc. 75 HP 3-drum Electric Port. Compressor, 220' actual, Low price.  
**JAMES WOOD, 53 W. Jackson Blvd., Chicago 4, Illinois**

#### FOR SALE

Approximately 6,000 12x16 steel cored pallets

**CONCRETE & CINDER BLOCKS**  
**PRODUCTS CO.**

10 Buell Rd.      Rochester 11, N. Y.  
Genesee 2121

#### GOOD VALUES—ALWAYS

24x18" and 36x18" American Hammermills.  
35 Ton Plymouth WLG Gase, Locomotive.  
80 HP to 550 HP Diesel Engines.  
20 Ton American Steel Guy Derrick.  
35 HP Clyde 2 drum swinger Gas Hoist.  
1 Yd. P&H 600A gas crane and dragline.  
80, 150, 250 HP Steam Boilers.  
**MISSISSIPPI VALLEY EQUIPMENT CO.**  
515 Locust St.      St. Louis 1, Mo.

No. 5 Allis Chalmers gyratory crusher.  
11" x 18" jaw crusher, top eccentric  
30" x 24" Jeffrey hammer mill  
No. 4 Jumbo Williams hammer mill  
20" x 6" Pan feeder  
Air Compressors, 100 to 1500 cu. ft.

**WM. C. JOHNSON & SONS MACH. CO.**  
1211 Hadley St.      St. Louis, Mo.

#### FOR SALE

Guaranteed used Steel Pipe and Boiler Tubes  
Wood and Steel Tanks  
Buildings, Valves and Fittings

**JOS. GREENSPON'S SON PIPE CORP.**  
Nat'l. Stock Yds., St. Clair Co., Ill.

#### FOR IMMEDIATE SALE

7½ Symons Gyratory Crusher.  
Can see it in operation.

**ROCKLEDGE PRODUCTS CO.**  
Portland, Indiana

#### FOR SALE

15 Ton, McMyler Locomotive Crane, Standard Gauge, 4 Wheels, 50' boom.

**ARTHUR S. PARTRIDGE**  
417 Pine St.      St. Louis 2, Mo.

You never can tell who may be looking for just the type of equipment you have to sell. List your idle equipment in a classified advertisement in ROCK PRODUCTS and convert it to ready cash as well as helping our war effort at the same time.



## FOR SALE

### FOR SALE:

Dragline-Shovel. Model 1400 P&H Electric Dragline. 100' boom, 4 yard bucket. Completely rebuilt. Model 5120 Marion Electric Dragline with 100' boom and 3 yard dragline bucket. Excellent condition. 3/4 Yard Osgood Commander Gasoline Shovel. Rebuilt.

**Frank Swabb Equipment Co.**  
Hazleton, Pa.  
Telephone 3906

### IMMEDIATE DELIVERY

15 ton, 22'x9' Bonded Motor Truck Scale .....\$440.00  
20 ton, 24'x10' Bonded Motor Truck Scale .....\$575.00  
30 ton, 34'x10' Bonded Motor Truck Scale .....\$1040.00  
3'x6' Single Deck, Bonded Vibrating Screen .....\$495.00  
3'x8' Double Deck, Bonded Vibrating Screen .....\$685.00  
Bonded Stoker Coal Crusher..\$345.00

### BONDED SCALE CO.

128 Bellview, Columbus 7, Ohio  
Scale, Vibrating Screen, and Crusher Mfrs.  
Phone Garfield 1651 Eve. University 2832

5-25' x 18' Lewiston Screw Washer, complete, new, never used.  
1-Monaghan Walker 3 cu. yd. Dragline Diesel powered.  
1-Hardinge Pebble Mill 8' x 48" flint liners.  
1-Hardinge Conical Scrubber 6' x 48".  
1-Manitowoc Rotary Dryer 72" x 37" oil fired electric driven.  
1-Reliance Jaw Crusher 10" x 15".  
1-Reliance Jaw Crusher 10" x 20".  
4-Model 60 Caterpillar Tractors, 2 with Bulldozers.  
1-Worthington 10" Centrifugal Pump complete with 200 H.P. Electric Motor.  
1-Allis-Chalmers 8" Centrifugal Pump.  
2-Totally enclosed Vertical Elevators 14" buckets complete with Electric Power.  
5-Austin Western 5 cu. yd. Side Dump Cars.  
6-Kanton all steel 6 cu. yd. 2 way Side Dump Cars.  
1-Chicago Pneumatic Portable gas power compressor, size 8 1/2" x 8".  
2-Cummins State Silos 18' dia, 32' high.  
1-Loonala Drill Traction Wheels Electric powered.  
**MICHIGAN SILICA COMPANY**  
ROCKWOOD, MICHIGAN

Int. Diesel TD-14 Tractor with Bulldozer and double drum winch. 45 ft. Crane Boom. Also Pullshovel Attachment for Lorain 75-A or 75-B.  
20 KW and 30 KW Int. & Cat. diesel Electric Sets.  
1 1/2 yd. Byers Gas Shovel.  
1 yd. B-Erie Gas-Air Shovel.  
14 ton Whitcomb Loco-Gas-36 Ga.  
20 ton Plymouth Loco-Gas-Std. Ga.  
27-E Smith Payer, Model H-31.  
5-Electric Hoists, 40, 50 and 60 HP.  
1 yd. Round Shaft Buckets.  
1 yd. and 1/2 yd. Dump Buckets.  
2-Shovel Attach. Byers Bearcat Jr. Shovel Attachment for 41-B Bucyrus-Erie.

**J. T. WALSH**  
Brisbane Building Buffalo 3, New York

### SHOVELS-CRANES

Marion 1 1/2 yd. Shovel & Crane, 65' bm., gas.  
Link-Belt Model K-2 Crane.  
General 1/2 yd. Diesel Crane.  
Northwest No. 6 Shovel-Crane-Dragline.  
Northwest No. 3 Crane, Shovel and Backhoe.  
P & H 700 Shovel and Crane, gas, rebuilt.  
P & H 600 Shovel, gas.  
P & H 203A, 8 ton Truck Crane.  
Browning 10 ton Truck Crane on Mack truck.  
Bucyrus-Erie 50B 2 yd. Diesel Dragline.  
Bucyrus Erie 50B Steam Shovel.  
Bucyrus Erie 42B Steam Shovel and Crane.  
Buc. Erie 50B, 1 yd. Electric Tunnel Shovel.  
Buc. Erie GA2 Shovel, gas.  
Page Walker 2 yd. Dragline, Diesel.  
Lorain 75B 1 1/2 yd. shovel, crane.  
Lorain 75B, 1 1/2 yd. Crane.  
Koehring 301, 3/4 yd. Crane and Shovel.  
Byers Bear Cat 1/2 revolving Crane, 5 tons cap.  
Otis Lidgerwood 1 yd., crane on wheels.

### TRACTORS AND MISCELLANEOUS

Cat. R.D.7 Tractor angledozer.  
Cat. R.D.4 Tractor angledozer.  
Int. T35 Tractor with bulldozer.  
Int. TD14 Tractor with bulldozer, rebuilt.  
Int. & D.18 Tractor angledozer.  
Allis Chalmers H.D.14 with Baker bulldozer.  
Allis Chalmers W.S.O. with Baker gradebuilder.  
Allis-Chalmers K Tractor with bulldozer.  
Allis-Chalmers HD10 Tractor with bulldozer.  
Bucket Elevator, vertical, 35', 25' buckets.  
B.S. 12 ton, 3 wheel Roller, steam.  
B.S. 10 ton, 3 wheel Roller, steam.  
Gallon 10 ton, 3 wheel Roller.  
6-I.H. Wagon Drills.  
4-Gardner-Denver Wagon Drills.  
3-Spencer Dust Collectors, equal to new.  
2-Steel Sift-Leg Derricks, 10 tons, 100' bin.  
Allis-Chalmers Cent. Pump, electric, 3500 GPM.  
Worthington 8" cent. Brass impeller vice port.

### CONCRETE PLANT AND EQUIPMENT

Complete Ready Mix Concrete plants.  
Transit Truck Mixers from 2 yds. to 5 yds.  
Hesser Super Tamper concrete Block Machine.  
2-Ransome 285 Mixers on skids, left & right-hd.  
Johnson 200 yd. Octo Bin, 4 comp.  
Fuller Kinyon Bulk Cement Unloader, portable.  
Fuller 400 Rotary Air Compressor, electric.  
Koehring 34E Dual Drum Paver.  
Pavers: 2-Koehring, 1-Multifoote, 1-Rex 27E.  
Rex Pumpers: Model 180, 190, 200.  
Flex-plane Finisher, 10'-15' up to 32'.  
**CRUSHERS-CRUSHER PLANTS**  
Roll: 54x24, 54x30, 48x36, 30x24.  
Telsmith 20-B steel frame Gyratory. V-belt drive.  
Gyratory Crusher: K.V.S. 30, 37-S, 49; 32, 8A, 8B; Taylor 8"; McCully 13", 8", 6".  
Allis-Chalmers Amacoona Type, 54"x24".  
Jaw: 6x12, 9x16, 10x20, 14x24, 15x26, 13x30, 16x32, 24x50.  
Complete Rock Crushing, Sand and Gravel Plants.

### BUCKETS-STONE SKIPS

Owen 1 yd. Clamshell, rehandling.  
Blaw-Knox 1/2 yd. Clam, digging.  
Hayward 1/2 yd. Clam, digging.  
1/2 yd. Williams Clamshell, digging.  
1/2 yd. Halse Clamshell, rehandling.  
1/2 yd. Halse Clamshell, rehandling.  
Erie 1/2 yd. Clamshell, rehandling.  
Owen Stone Grapple.  
Hayward 1/2 yd. Standard Orange Peel.

### LOCOMOTIVES-CARS

American 45-ton, steam, Saddle Tank.  
Plymouth 36-ton, gas, std. gauge.  
Vulcan 30-ton, steam, Saddle Tank.  
Mack 30-ton, std. ga. Diesel-Electric.  
Plymouth 36-ton, 1 gauge, gas.  
Whitcomb 14-ton Diesel, 36" gauge.  
Vulcan 8-ton, std. gauge, 36" gauge.  
Vulcan 6-ton, gas, 36" gauge.  
Porter 12-ton, Saddle Tank, steam, 36" gauge.  
3-Western Steel, 20 yd. Air Dump Cars.  
**RICHARD P. WALSH CO. • 30 Church St. • New York**

### FOR SALE

Crawler type—Steam shovel and crane boom  
3/4 yd.—Bucyrus Erie—Type B  
Serial No. 984.

**EXCELLENT CONDITION**  
**MANLEY SAND COMPANY**  
ROCKTON, ILLINOIS

### FOR SALE

90 H. P. 3 phase 220V 720R PM Wagner Electric motor. Rebuilt, guaranteed. 2 sand settling tanks; 4" discharge centrifugal pump; 4" pipe; 40" x 20'-0 rotary screen. Price right.

**D. A. DAVIS**  
Crawfordsville, Indiana

### DIESELS

ALL SIZES, TYPES

**A. G. Schoonmaker Co.**  
50 Church St. Phone Worth 2-0455  
New York 7, N. Y.  
Business Established 1898.

### AIR COMPRESSORS

BELTED: 355, 528, 676, 1000, 1300 & 1570 Ft. ELECTRIC: 478, 676, 807, 1302, 1722 & 2200 Ft. DIESEL: 683, 807 & 1000 Ft.  
**PORTABLE GAS:** 110, 160, 220, 310, 540 & 1300 Ft. STEAM: 49, 310, 528, 1300, 2200 & 2600 Ft.  
**CLAMSHHELL BUCKETS, SKIPS & GRAPPLERS**  
Owen B & H Stone Grappler.  
2 yd. OWEN Type 8 Material Handling.  
1 1/2 yd. 1 yd. & 3/4 yd. HAYWARD Class E.  
18 Steel Skips 5 1/2 x 6 x 2 1/2.  
5 Ton Bucyrus Rock Grapple.

### CRANES AND DRAGLINES

1-18 Yd. 160' Boom Electric Caterpillar Dragline.  
3/4 yd. 5 Ton O & S 30 Ft. Boom.  
12 Ton NORTHWEST 50 Ft. Boom Gas.  
20 Ton LIMA 750 Diesel, 65 Ft. Boom.  
25 Ton BROWNING & 30 Ton AMERICAN Loco.  
25 Ton LINK BELT K-48 Electric, 70 Ft. Boom.

### CATERPILLAR SHOVELS

3/4 yd. LIMA Diesel.  
2 Yd. Marion Diesel Shovel.  
3/4 yd., 1 1/2 yd., 2 yd. & 4 yd. MARION Electrics.  
1 yd. NORTHWEST Gas.  
1 1/2 yd. LIMA Diesel.  
1 1/2 yd. BUCYRUS 41B Steamer.  
4 yd. Bucyrus 120 B Electric. Also 3 yd. Erie Elec.

### DUMP CARS

46-KOPPEL 1 1/2 Yd. 24 & 30 In. Ga. V Shaped.  
15-2 Yd., 3 Yd., 4 Yd., 6 Yd., 12 Yd., 36 In. Ga.  
20-Std. Ga. 12 Yd. 20 Yd. & 30 Yd. Cap.  
15-Std. Ga. 50 Ton Battleship Gondolas.

### FLAT CARS

9-50 ton std. ga. heavy duty flat cars.

### HOISTING ENGINES

Gas: 15, 30, 60, 100 & 120 HP.  
Electric: 30, 52, 80, 100 & 150 HP.  
Steam: 6 1/2x8, 7x10, 8 1/2x10, 10x12, 12x24.

### DIESEL UNITS

75, 90, 180, 200 HP. F. M. Engines.  
175 KVA Worthington 3/60/2300.  
275 KVA Fairbanks 3/60/2300.  
343 KW, Fairbanks-Morse 3/60/480 V.

### BALL, ROD AND TUBE MILLS

5'x22" HARDINGE CON. Dry Ball Mill.  
6'x22" HARDINGE CONICAL Pebble Mill.  
8'x22" HARDINGE CONICAL Ball or Pebble Mill.  
48x, 8x6 & 10x9 Straight Ball Mills.  
4x16, 5x18 & 5x22 Tube Mills & 6'x22".  
3 1/2x8 & 5x7 Air Swept Tube Mills.  
2x1 1/2, 6x12 & 5x12 ROD MILLS.

### PULVERIZERS

JEFFERY, 24x20 & No. 1 Sturtevant Ring Roll.  
RAYMOND Auto Pulverizer No. 0000, 0 & 3.

### STEEL STORAGE TANKS

10,000 Gal., 15,000 Gal. & 20,000 Gal. Cap.

### SEPARATORS AND COLLECTORS

8, 10 and 14 ft. Separators. Garco & Bradley.

### ROLL CRUSHERS

36x60 Fairmont & 36x20 Diamond.

### JAW CRUSHERS

10x8, 13x7 1/2, 14x7, 15x9, 15x10, 16x9, 16x12, 16x10, 18x11, 20x9, 20x10, 20x12, 26x12, 30x15, 30x13, 36x15, 36x30, 36x18, 36x11, 36x9, 36x6, 36x10, 36x24, 42x9, 48x24, 48x36, 60x12, 84x66, 36x16, 0x36.

### CONE & GYRATORY CRUSHERS

5 No. 19, 25, 37 & 49 Kennedy.  
18 in., 24 in., 30 in., 36 in. & 48 in. Symons Disc.  
4-10 T2 Traylor 4 ft. Gyratory.  
4-Nos. 5, 3 & 6 Austin Gyratory.  
2-Traylor T-12 Bulldog Gyratory, also 16 inch 8 in. Traylor T. Gyratory.  
17 Gates K-Nos. 3, 4, 5, 6, 7 1/2, 8, 9 1/2 & 21.  
7-Symons Cone, 2, 3, 5 and 7 ft.  
6, 10 & 13 inch Superior McCullys.

### CONVEYOR PARTS

BELT: 1000 Ft. 60 in., 700 Ft. 40 in., 600 Ft. 36 in., 800 Ft. 30 in., 1642 Ft. 24 in., 517 Ft. 20 in., 297 Ft. 18 in., 500 Ft. 16 in., 300 Ft. 14 in.  
IDLERS: 54 in., 42 in., 36 in., 30 in., 24 in., 20 in., 18 in., 16 in. & 14 in.  
Head & Tail-Pulleys-Takeup for all sizes.  
Steel Frames: 5,000 Ft. 24 in., 30 in. & 36 in. Sections

### ROTARY DRYERS AND KILNS

36 in.x20 Ft., 3 Ft.x30 Ft., 4 Ft.x30 Ft., 54 in.x30 Ft., 42 in.x24 Ft., 5 Ft.x30 Ft., 5 Ft.x16 Ft., 5 Ft.x60 Ft., 6 Ft.x60 Ft., 6 Ft.x20 Ft., 6 Ft.x70 Ft., 10x20, 7 1/2x100 & 8x110 Ft. Kilns.

### STEEL DERRICKS

GUY: 8 Ton 85 Ft. Boom, 15 Ton 100 Ft. Boom, 20 Ton 115 Ft. Boom, 50 Ton 100 Ft. Boom.  
STIFF LEG: 5 Ton 70 Ft. Boom, 15 Ton 100 Ft. Boom, 25 Ton 100 Ft. Boom, 75 Ton 135 Ft. Boom.

### LOCOMOTIVES

GASOLINE: 3 Ton, 5 Ton, 8 Ton, 12, 14, and 30 Ton.  
STEAM: 0 Ton, 20 Ton, 40 Ton, 60 Ton & 80 Ton.  
ELECTRIC: 2 Ton, 5 Ton, 8 Ton, 40 Ton.  
DIESEL: 4, 8 & 15 Ton.

### SCREENS

VIBRATING: 2x4, 3x6, 12x8, 3x5, 4x5, 4x8, 4x10, 4x12, & 4x12, 1, 2 & 3 Deck.  
HUMMER ROTEX, NIAGARA & ROBINS.  
REVOLVING: 3x12, 3x16, 3 1/2x18, 3x24, 4x16, 4x20, 4x23, 4x24, 5x30, 5x20, 6x20.

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COMPLETE PLANTS BOUGHT AND SOLD  
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**EQUIPMENT CORPORATION**

of **AMERICA.**

**WE SERVE 4 WAYS**

BUY	REBUILD
SELL	RENT



**ELECTRIC CRANE**  
1-18 ton O. & S. Type H CRANE, mtd. on 8' 10" ga. track, 50' boom. Power 52 HP 440/60/3 elect. mtr.

**AIR COMPRESSORS**  
Portable and stationary, belt with elec. or gas power, sizes from 20 cu. ft. to 1,000 cu. ft.

**CRUSHERS**  
1-No. 2 Climax jaw crusher, size 9x16".  
1-Acme jaw crusher, Ser. No. 1873, size 12x20".  
1-Acme jaw crusher, Ser. No. 1686, size 9x16".  
1-No. 3 Champion jaw crusher, size 7 1/2x13".  
1-United Iron Works, "Blake-type" jaw crusher, size 9 1/2x21".  
1-Bayley Macey jaw crusher, size 9x18".  
1-No. 3 New Holland jaw crusher, size 6x20".  
1-Allis Chalmers, No. 5 gyratory crusher, Ser. No. 5331, opening 10x38".  
1-Austin No. 5 gyratory crusher, Ser. No. 2945, opening 12x35 1/2".

**DERRICKS**  
3-Steel Guy derricks: 1-20-ton American, steel derrick, 110' mast, 100' boom; 1-5-ton Terry Guy Derrick, 70' mast, 60' boom; 1-5-ton Insley, 75' mast, 80' boom. Stiff leg derricks: 1-25-ton Hunter, 40' mast, 80' boom; 1-2-ton Pittsburgh, 20' mast, 15' mast. Also a number of wood stiff leg derricks, 1 to 5-ton crs.

**HOISTS (Elec., Gas, Steam)**  
85-Electric, ranging from 20 HP. up to 125 HP., consisting of triple-drum, double-drum and single-drum, with AC or DC motors, some with attached swingers. Following makes: American, Clyde, Lambert, Lidgerwood and National.  
Gas hoists ranging from 8 to 120 HP., single, double and triple-drum; all standard makes (38 in stock).  
Steam, ranging from 8 HP. to 60 HP., single, double and triple-drum; all standard makes.

**LOCOMOTIVE CRANES**  
3-25-ton Loco. Cranes, Browning and Industrial, Ser. Nos. 1724, 1720 and 2811, oil fired, 40', 45' booms.  
1-25-ton Ohio steam Loco. Crane, Ser. No. 3722, 50' boom.

**PARTIAL LIST ONLY — SEND FOR 64-PAGE STOCK LIST**  
All this equipment is owned by us and may be inspected at one of our plants.  
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## LOCOMOTIVES SHOVELS CRANES CARS

- 1-42 1/2 ton Porter 0-4-0 saddle tank locomotive, standard gauge, A.S.M.E. boiler, entire new firebox, rebuilt.
- 1-26 ton American 0-4-0 saddle tank locomotive, standard gauge, with A.S.M.E. boiler, thoroughly overhauled.
- 1-7 1/2 ton Baldwin 0-6-0 separate tender switcher, full time I.C. papers, overhauled.
- 1-Whitcomb diesel locomotive, 36" gauge, with Caterpillar V-8 engine, air brakes, electric lights. This locomotive built in 1936 and has now been put in first class serviceable condition with new wheels, chains, sprockets, reversing gear, and bronze clutch plates. Weight is 20 tons in full working order.
- 5-Western 30 yard two way air operated side dump cars, standard gauge, DROP DOOR TYPE, first class condition.

**Birmingham Rail & Locomotive Co.**  
BIRMINGHAM 1, ALABAMA

**FOR SALE**  
2-5 1/2 x 22" Tube Mills.  
3-42" Griffin Mills.  
1-14' Sturtevant Air Separator.  
1-Richardson Automatic Bulk Scale, 1000-lb. capacity.  
Write Box C-18, c/o Rock Products, 309 W. Jackson Blvd., Chicago 6, Ill.

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Thousands of heroic Chinese literally used their heads in constructing the world's largest military airports. In U. S. A. the best way to use your head is to select the most suitable Construction Equipment for each job. E. C. A. has it for RENT or SALE.

**PUMPS (Elect. Centrifugal)**  
**HORIZONTAL:**  
1-10x18" Wetman-Jaeger No. P-4201, power, 50 HP AC motor; capacity 2500 GPM @ 35' head.  
1-8x8" Worthington, 4 stage, No. 676005W, without power. Capacity 900 GPM @ 875' head.  
1-8x8" Worthington, No. 316531, power 50 HP AC motor. Capacity 2000 GPM @ 30' head.  
1-6x6" Morris, No. 109098, power 100 HP, 2200/60/2 slip ring motor. Capacity 1200 GPM @ 210' head. Shut off head 270'.  
1-6x6" Fairbanks-Morse pump No. 441649, combination gas and electric power, one end Buda engine, other end 50 HP AC electric motor, operate either power. Capacity 1000 GPM @ 150' head.  
1-6x6" Denling pump No. DC4111, power 25 HP AC motor. Capacity 1000 GPM @ 70' head.  
1-6x6" Allis Chalmers No. 5418, power 40 HP AC motor. Capacity 1000 GPM @ 50' head.  
2-6x3" Union pumps, No. 174832, 174415, power 20 and 15 HP AC motors. Capacity 850-750 GPM @ 90-40' heads.  
1-5x4" Dayton-Dowd pump No. 4713, power 10 HP AC motor. Capacity 500 GPM @ 40' head.  
4-5x3" Ingersoll Rand pumps, 2 stage No. 79576, 79574, 79575, 80252, power 100 HP AC motors. Capacity 325 GPM @ 500' head.  
1-5x4" Dayton-Dowd pump, No. 4713, power 10 HP AC motor. Capacity 500 GPM @ 40' head.  
1-4x4" LaBour No. 4738, power 20 HP AC motor. Capacity 400 GPM @ 90' head.  
**VERTICAL:**  
2-12" Dayton-Dowd centrifugal pumps, No. 32923, 33145, power 50 HP AC motors. Capacity 4250 GPM @ 32' head.  
1-6" Aurora pump No. 5397, 30 HP AC motor. Capacity 450 GPM @ 25' head.  
5-4" Economy pumps, No. 28615, 25055, 28215, 28217, 28124, power 7 1/2 HP AC and DC motors. Capacity 100 GPM @ 100' head.  
1-2 1/2" Evinrude No. 2P002 power 1 1/2 HP AC motor. Capacity 100 GPM @ 25' head.  
**WE HAVE A LARGE STOCK OF CENTRIFUGAL, LIFT AND FORCE, JETTING, DREDGING, TRIPLE, ETC. PUMPS NOT SHOWN IN THIS LIST, GAS AND ELECTRIC POWER.**

**EQUIPMENT CORPORATION**  
of AMERICA.

## FOR SALE

- Austin Gyratory Crusher No. 107.
- Buchanan Type B 12" x 36" Jaw Crusher.
- Allis-Chalmers Double Roll Crusher, Garfield Type, size 54" x 20", with new manganese roll shells.
- Allis-Chalmers Double Roll Crusher, Type XX, size 54" x 24", with new tire shell.
- Lippman Scrubber Screen, 72" x 18", complete with G.E. 20 HP motor, 440 volt with starter.
- Tyler Type 31 Tandem Hummer Screen, 8' x 5' surface with G.E. Type G2 Motor Generator Set.
- Marion Type 450 Electric Shovel, crawler mounted, 22' boom, 1 1/4 yard bucket, equipped for 440 volt current.

Address inquiries to:  
**AMERICAN ZINC COMPANY OF TENNESSEE**  
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Have surplus stock Sauerman Bros. Single Sheave Blocks with and without bushing. Sell cheap. Write for details.  
**MAHONEY-CLARKE, INC.**  
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## PRICED RIGHT!

- 1-Fuller Kinyon Type C Portable Transport Pump for unloading dry, pulverized materials from box cars, bins, etc., 12 to 15 ton per hour, motor driven.
- 1-Vulcan 6'x42" Rotary Dryer, 1/2" shell, located West Coast.
- 1-Vulcan 6'x60" Rotary Kiln and 4'x35" Rotary Cooler.
- 1-Set of 18"x10" Crushing Rolls.
- 1-Blake Jaw Crusher, 9"x15".
- 3-Oliver Rotary Continuous Filter, 5'x8', 6'x6', 3'x4'.
- 2-Bucket Elevators 20' to 75'.
- 8-Belt Conveyors 20' to 50'.
- 5-Tyler Screens 3'x5', 4'x5'.
- 1-Jeffrey Hammer Mill, 24"x18".

Partial List Only.  
**WANTED:** Crushers, Pulverizers, Dryers, etc. Send us your list.

**BRILL Equipment Co.**  
222 WEST 34th STREET, NEW YORK 1, N. Y.

## FOR SALE

**CRUSHERS:** Farrell Jaw Type, 11x15; Pioneer Port. Pit., Model 53, gas dr., Jaw Type, 10x20, mid. on four wheels.  
**DIESEL POWER UNITS:** Two Hercules, Model DRXR, 6-cyl., 4 1/2"x5 1/4", 120 HP at 2,000 RPM; two G.M.C. series 6-71, 6-cyl., 4 1/4"x5", 165 HP at 2,000 RPM; ten Leyland, 6-cyl., 4 1/4"x5", 90 HP at 1,800 RPM; four Leyland, 12-cyl., 4 1/4"x5", 180 HP at 1,800 RPM. Also Diesel Engines up to 3,150 HP, Stationary and Marine.  
We carry a large stock of equipment, including Cranes, Derricks, Shovels, Draglines, Cars, Hoists, Locomotives, etc.  
**CONSTRUCTION & POWER MACHINERY, INC.**  
270 23d St., Brooklyn, N. Y. Tel. South 8-5254

## FOR SALE

- 1-24x50 Champion Jaw Crusher (reinforced). Complete with 100 horsepower General Electric slip-ring motor, complete with starting controls and drive belt, also to fit this unit 40"x10" plate feeder with drive belt, clutch and 20 horsepower motor.
  - 1-42"x50" conveyor, complete with 10 horsepower motor, drive belt and 42"—11-ply conveyor belt.
- This unit can be seen in operation at present time, priced right for quick sale.

**AL. C. PETTERS COMPANY**  
St. Cloud, Minnesota

- 4 Jeffrey-Traylor No. 4 Vibrating Pan Feeders, two never used, two only slightly.
- 36" Traylor TZ Gyratory Crusher, belt drive.
- No. 2 Williams Jumbo Jr. Pulverizer, rebuilt.
- 20"x24" Greenville Double Roll Crusher.
- 14"x36" Cedar Rapids Jaw Crusher.
- Universal 40"x30" Double Roll Crusher.
- 21"x42" McLanahan Single Roll Crusher.
- Barber Greene Models 42 and 62 Bucket Loaders.
- Austin-W Gravel Washing Plant.
- 3/4 yard Orton Crane, 47' boom.
- 3/4 yard Koehring Gas Shovel.
- 15-4 yard Sterling End dump trucks.
- 54" dia. x 40" Rotary Dryer.
- 165 Ton 3 comp. Blaw Knox Steel Bin.
- 12 x 36" Buchanan Type B Jaw Crusher.
- Raymond No. 00 Pulverizer, separator, collector.
- Vulcan 8 ton Std. Ga. Gas Locomotive.
- 1 1/2 and 2 yd. Brooks Load Luggers.

**MID-CONTINENT EQUIPMENT CO.**  
710 Eastgate Pa 2290 St. Louis 5, Mo.

## FOR SALE

Complete Lime Plant, includes Clyde-Raymond Hydrator, 6 Steel Shaft Kilns, Lime and Stone Crushers, Well and Wagon Drill, Tools and Other Equipment.  
**STEACY & WILTON COMPANY**  
Wrightsville, Pa.

## TVA DRILLS & JACK-BITS

I have purchased the large lot of splendid drifter drills, jack-hammers, jack-bits, etc., at Appalachia Dam, Tenn. TVA bought most of this equipment in 1942 and 1943 and has kept it in excellent condition. Will offer this virtually new equipment at approximately half price, and will ship subject to your approval upon arrival and before payment.

60 IR drifter drills, DA-35, centralizers and automatic power feed.

13 GD paving breakers, 272-H.

2 Sullivan paving breakers, K-7.

3 IR Jack-hammer drills, Model S-68.

2 GD Jack-hammer drills, Model S-55.

37,000 IR detachable jack-bits, Type 2, 4 point; side hole; sizes 1 & 1 1/16 to 2 & 1/2". Detailed list on request.

### ALSO

400 tons structural steel at Douglas dam, nearby. This includes 36" std. I-beams and 14" to 21" H columns, 4x6" and 6x8" angles; all long lengths.

300 lbs. Rock cork asphalt; Johns-Manville Co.

Page dragline bucket; 3/4 yd.

23" dia. lifting magnet; 230 volts A.C.

54"x22" single roll Ocala knob roll crusher; 4 extra rolls.

4 Brooks 2 yd. Loadluggers, Model CH 200, with 90 buckets; 4-1 1/2 yd. with 160 buckets.

Clutch pulley, 6 ft. dia. x 29" face.

### CURTIS PORTABLE AIR COMPRESSOR

210 cu. ft., on 4 hard rubber wheels. Powered by Continental gasoline engine. Price \$850.00. Completely shop overhauled.

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Phone 248

## PLANT EQUIPMENT

### TYLER HUM-MER SCREEN

Type 31—Two 3'x5' Screen surfaces, complete with generator.

### GYROSET VIBRATING SCREENS

NEW—24"x48" screening surface.

### 37" BEDFORD OPEN SIDE PLANERS

13' and 15' Beds

### INSLEY GUY DERRICK

85' Mast, 75' Boom

### CRUSHERS

American Ring Pulverizer No. 13.

Symons Disc Crusher, Size 24.

Gruendler Peerless Screenings Grinder No. 4.

Webb City Jaw Crusher—12x24.

## INLAND EQUIPMENT COMPANY

P. O. Box 477 Nashville 2, Tenn.

## FOR SALE

## FOR IMMEDIATE DELIVERY OF RUBBER PRODUCTS

Conveyor Belting...Transmission Belting...Elevator Belting...Fire, Water, Air, Steam, Suction or Welding Hose, etc.

CALL, WIRE or WRITE  
**CARLYLE**  
THE  
RUBBER HEADQUARTERS

CARLYLE RUBBER PRODUCTS ARE NEW, GUARANTEED & LOW PRICED

## CONVEYOR BELTING

### ABRASIVE RESISTANT COVERS

Width	Ply	Top-Bottom	Covers	Width	Ply	Top-Bottom	Covers
48"	8	1/8"	1/16"	20"	5	1/8"	1/32"
42"	5	1/8"	1/16"	20"	4	1/8"	1/32"
36"	6	1/8"	1/16"	18"	4	1/8"	1/32"
30"	6	1/8"	1/16"	16"	4	1/8"	1/32"
30"	5	1/8"	1/16"	14"	4	1/16"	1/32"
24"	5	1/8"	1/32"	12"	4	1/16"	1/32"
24"	4	1/8"	1/32"				

Inquire For Prices - Mention Size and Lengths

## TRANSMISSION BELTING

### HEAVY-DUTY FRICTION SURFACE

Width	Ply	Width	Ply	Width	Ply
18"	6	10"	6	6"	5
16"	6	10"	5	5"	5
14"	6	8"	6	4"	5
12"	6	8"	5	4"	4
12"	5	6"	6	3"	4

Inquire For Prices - Mention Size and Lengths

## ENDLESS "V" BELTS

"A" WIDTH All Sizes "D" WIDTH All Sizes  
"B" WIDTH All Sizes "E" WIDTH All Sizes  
"C" WIDTH All Sizes Sold in Matched Sets  
Inquire For Prices - Mention Size and Lengths

### PROTECT THAT PLANT

## FIRE HOSE

### APPROVED SPECIFICATION HOSE

#### EACH LENGTH WITH COUPLINGS ATTACHED

Size	Length	Per Length
2 1/2"	50 feet	\$28.00
	25 "	16.00
2"	50 "	23.00
	25 "	13.00
1 1/2"	50 "	20.00
	25 "	11.00

Specify Thread On Couplings

## SPECIAL OFFER... HEAVY DUTY RUBBER HOSE

### WATER HOSE

I.D. Size	Length	Couplings Attached per Length
3/4"	25 feet	\$4.25
1"	50 "	8.00
	25 "	6.25
1 1/4"	50 "	12.00
	25 "	7.50
	35 "	10.50
	40 "	12.00
1 1/2"	50 "	15.00
	25 "	10.00
	35 "	14.00
	50 "	20.00

I.D. Size	Length	per Length	Couplings
1/2"	25 feet	\$5.00	\$1.50 Pair
	50 "	10.00	1.50 "
3/4"	25 "	6.25	2.50 "
1"	50 "	12.50	2.50 "
	25 "	10.00	3.50 "
	50 "	20.00	3.50 "

LARGER SIZES ALSO AVAILABLE  
All Prices—Net—F.O.B. New York

## CARLYLE RUBBER CO., INC.

62-66 PARK PLACE

NEW YORK, N. Y.

## LOCOMOTIVES

- 1—20-ton Plymouth standard gauge gasoline.
- 1—20-ton Whitcomb diesel 36" gauge.
- 1—57-ton Baldwin type 0-6-0 standard gauge saddle tank.
- 2—67-ton American type 0-6-0 standard gauge separate tenders.
- 2—78-ton Baldwin type 0-6-0 standard gauge side tanks.

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Girard Trust Co. Bldg., Philadelphia 2, Pa.

## 1/2-YARD GAS SHOVEL

3/4 swing, Type C, Insley, 17' boom, 12'6 dipper stick. Also skimmer attachment. Rebuilt—very low price.

## THE INDUSTRIAL EQUIPMENT CORP.

P. O. Box 1647,  
Pittsburgh 30, Pa.  
Warehouse: Carnegie, Pa.



## FOR SALE

### CRUSHERS, ROLLS, MILLS

ACME 6"x21" type C jaw crusher, roller bearings.  
Buchanan 10"x10" Blake type jaw crusher.  
New England 11"x20" jaw crusher, cast steel frame.  
Schoell 9"x16" jaw crusher, heavy cast frame.  
Traylor "BULLDOG" 11" gyratory crusher.  
Sturtevant No. 0 Rotary Flue crusher.  
Buchanan 2 roll crusher, 30"x14", C.  
AG double roll crusher, 42"x10".  
Robins double roll 24"x20" coal crusher.  
Single roll 24"x24" spiked crusher.  
Simplex coal pulverizer with roller bearings.  
Williams No. 2 hammermill.  
Mid-west No. 2 hammermill.  
Eight tons of steel balls, 1" to 2".

### BUCKET ELEVATORS & CHAIN

Chain elevators, 10", 18" and 20" buckets.  
Elevator casing, 10"x58" of 14" plate.  
50' chain elevator with 8" malleable buckets.  
Continuous 14"x32" chain bucket elevator.  
Continuous 14"x50" chain bucket elevator.  
Continuous 30"x40" double chain bucket elevator.  
Grain elevators, with 5" to 18" buckets on belt.  
Link Belt chain barrel elevator.  
500' of Fiddle Chain No. 739.  
500' of Jeffrey 126 Di-left & right roller chain.  
360' No. 3 Champion Oilwell roller chain.  
300' Jeffrey No. 1123 roller chain.  
400' of No. 78 chain with Salem buckets, 5" & 8".  
150' L-B chain No. 847 with K-2.  
300' L-B chain No. 825 with A-42.  
300' Ewatts malleable chain No. 124.

### VIBRATING & REVOLVING SCREENS

Robins "GYREX" double deck 4'x10" screen.  
Simplicity three deck 3'x6" vibrating screen.  
PLAT-O single deck 3'x6" vibrating screen.  
Jigger three deck 2'x5" vibrating screen.  
Hummer single deck 3'x5" vibrating screen.  
Hummer single deck 4'x5" vibrating screen.  
Generator for Hummer screens.  
Revolving screens: 4'x16" and 4'x22".

### CONVEYORS

Conveyor 24"x20" with steel-belt.  
Jeffrey all steel foundry conveyor, 42"x150".  
Jeffrey 24" Standard Steel Apron Feeder, 25'.  
Link Belt single flight conveyor, 15"x36".  
Flat steel plate conveyor, 47"x25".  
Hais 14"x24" Portable flat belt conveyor.  
Belt idlers and conveyor belt.  
Belt conveyor pulleys for 12" to 42" belt.  
Belt trippers for 14", 16", 18" belt.  
Weiler 36" horizontal automatic take-ups.  
Screw conveyors 12" and 16" flights.

### MISCELLANEOUS

Lidgerwood single drum 15 hp electric hoist.  
National double drum 25 hp electric hoist.  
Saunders double drum 50 hp electric hoist.  
Chicago belted air compressor, 529 CFM, NSR.  
Electric Motors from 1 to 100 hp.  
Morris 6" manganese lined sand pump.  
Elliott 4" belted sand pump.  
Worthington 4" centr. pump with 25 hp motor.  
Two 6" centr. 15 hp electric vertical pumps.  
4 ton and 8 ton 36" gauge gasoline locomotives.  
20" and 24" flat cars.  
400 hp V-belt double pulley drive with V-belts.

### STONE WORKING EQUIPMENT

2 Meyers stone saws, 48" and 60" dia. Late type.  
1 Lincoln open side electric planer, 42"x12".  
2 Lincoln open side electric planers, 36"x12".  
1 Patch 36"x12" open side belted planer.

### G. A. UNVERZAGT & SONS

136 Colt Street, Irvington, New Jersey

### ENGINES — POWER UNITS

COMPRESSOR, Diesel, Worthington.  
Model 315, portable, steel wheels.  
Hercules Diesel engine, 1942 model  
A-1; guaranteed .....\$5185.00  
ROLL CRUSHER, Galena 14" x 20",  
heavy duty, good condition...\$700.00  
JAW CRUSHER, late type, roller bearing,  
Good Roads, 10" x 20"...\$1265.00  
TANDEM ROLLER, Buffalo-Springfield  
5-ton, four-cylinder, power steer;  
good used condition.....\$1875.00  
MOTOR GRADER, Model AD Allis-  
Chalmers, tandem drive, General Motors  
diesel engine; 1942 model; re-  
built and guaranteed.....85% of List  
WAGON DRILL, Cleveland, DR30, rub-  
ber tires, late model, like new..\$1165.00

## ROY-C-WHAYNE SUPPLY COMPANY

800 W. Main St. Wabash 1375  
Louisville 2, Ky.

### CRUSHER—JAW

1—Traylor 36 x 42 with or without Pan Feeder.

### CRUSHER—REDUCTION

1—Traylor 4 ft., type TV.

### DIESEL MOTORS

2—Cummins 200 H.P., supercharged Diesel Motors for use in Euclid and other similar heavy trucks.

### PAN FEEDER & CONVEYOR

1—Pan Feeder 48 x 10 ft.  
1—Pan Conveyor 24 x 65 ft.

### HAMMER MILL

1—Dixie Mogul Breaker Plate type, size 5021,  
hopper opening 24 x 24.

### LOCOMOTIVES

1—Lima 80 ton, 6 wheel, Switcher with piston  
valve, with tender, superheater, code boiler,  
200 lbs. pressure, electric lights, Walschaert  
valve motion, automatic lubrication; thor-  
oughly modern, excellent condition, immediate  
delivery. For sale or rent.

1—Baldwin and 1—American, 6 wheel, Switchers  
with tenders, 70 and 80 tons capacity, ASME  
code boilers.

1—35 ton and 1—25 ton, gas, standard gauge,  
air brakes, thoroughly modern.

1—Milwaukee 12 ton, gas, standard gauge.

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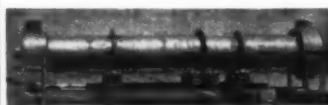
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Executive with experience in grinding, tabling, drying, acid treating silica sand. Must be able to design and construct entire layout. Eastern State location. State fully your qualifications and remuneration expected. Your reply will be treated confidentially. Write Box C-8, c/o Rock Products, 309 W. Jackson Blvd., Chicago 6, Ill.

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Familiar with pipe, rock or any special concrete product. Must have at least high school education, be mechanically inclined and have pleasing personality. Age limit 48. Post-war opportunity with large concern branching out into full line of products in various sections of the United States and operating on an incentive profit sharing plan. Past record must stand rigid inspection. Include photograph in reply. Write Box C-15, c/o Rock Products, 309 W. Jackson Blvd., Chicago 6, Ill.

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SUPERINTENDENT—Industrial sand plant. Write birth date, education, experience, salary expected. Write Box C-5, c/o Rock Products, 309 W. Jackson Blvd., Chicago 6, Ill.

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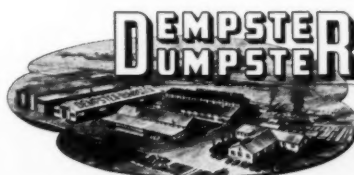
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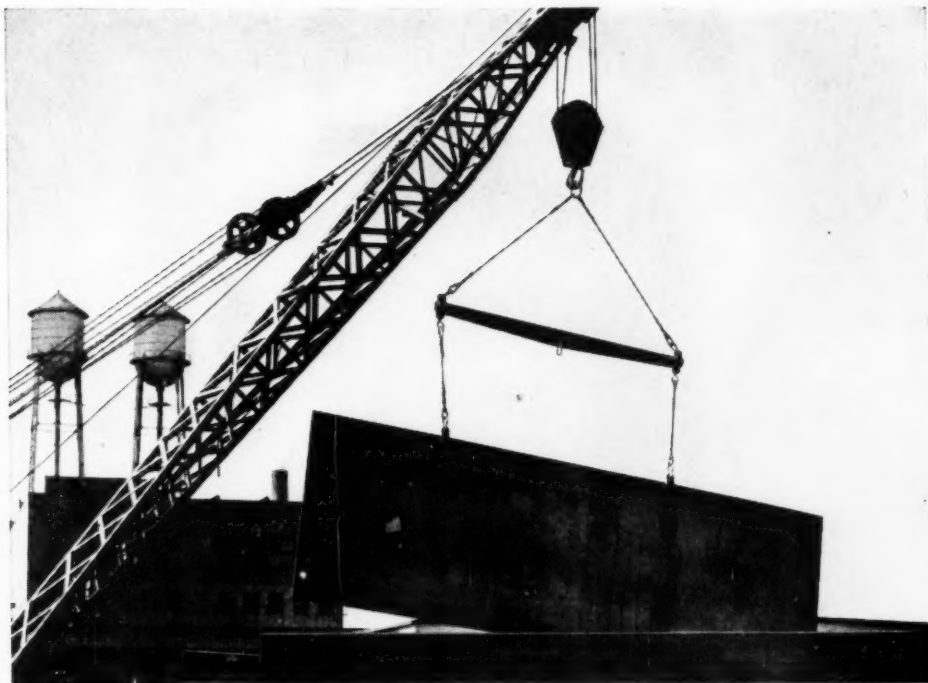
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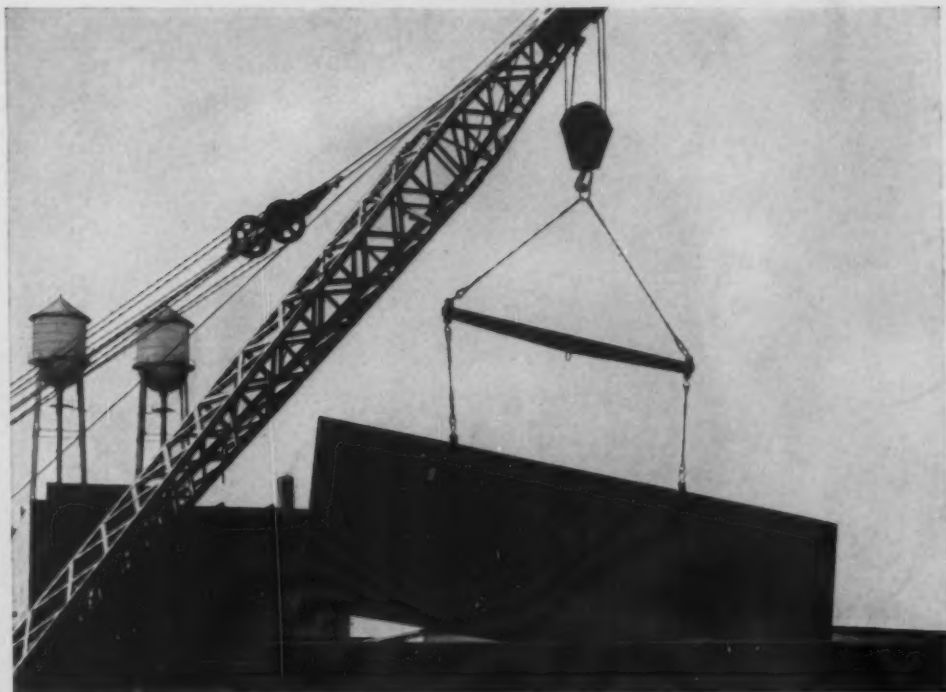
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*Specify* **TRU-LAY** *Preformed*

Regardless of the job at hand or immediately ahead, you'll find that American Cable **TRU-LAY PREFORMED WIRE ROPE** handles easier, reeves faster, lasts longer, is safer for the workmen.

It is the preforming process, scientifically applied at the mill, that endows **TRU-LAY** with high fatigue resistance. Being more flexible than non-preformed, **TRU-LAY** bends easily, is pre-broken-in, resists kinking and whipping, spools better. Being free of internal stresses, **TRU-LAY** does not squirm or rotate in sheave grooves. This saves both rope and sheaves. The preforming process has enabled rope to set new and higher standards of service, and **TRU-LAY** is the original preformed wire rope. Specify **TRU-LAY PREFORMED** for your next line.

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**ESSENTIAL PRODUCTS** • TRU-LAY Aircraft, Automotive, and Industrial Controls • TRU-LOC Aircraft Terminals • AMERICAN CABLE Wire Rope • TRU-STOP Brakes • AMERICAN Chain • WEED Tire Chains • ACCO Malleable Castings • CAMPBELL Cutting Machines • FORD Hoists, Trolleys • HAZARD Wire Rope • MANLEY Auto Service Equipment • MARYLAND Bolts and Nuts • OWEN Springs • PAGE Fence, Shaped Wire, Welding Wire • READING-PRATT & CADY Valves • READING Steel Castings • WRIGHT Hoists, Cranes • WILSON "Rockwell" Hardness Testers

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# TO AN OLD STORY



The years since Pearl Harbor have added emphasis to the already outstanding record of Bucyrus-Erie quarry and mining shovels. Famous for low cost, high speed output during sixty peacetime years, Bucyrus-Erie excavators have met the wartime challenge with increased production in spite of round-the-clock punishment in heavy digging.

That is the record. Behind its accomplishment stands Bucyrus-Erie's "years ahead" design of the most modern stripping, loading, and drilling equipment manufactured today. Rich in excavating experience, Bucyrus-Erie will continue to give you outstanding excavating machinery that will mean consistently large output at lowest cost per yard.

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